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ORTHOEDIC SURGERY

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 I C L D T A T H W I F O R C E R F B I C R D W W P L U I J H N I P O R R J H R I D L O V
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ROENTGENOLOGY

UNITED STATES J I T C A I C R C L I R T M H I C K Y H E N R Y H U L S T C F O R E C
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 A R H I R

SURGERY OF THE EYE

UNITED STATES F A L B A N H D B R A D H H U I F D A D J A N F A C L N E
 W I L M C I B V I C J O L W E K C H D W T T W I I H W L D F C A E Y A
 W O H I R W I N C I A N D J I N B L A R W T H M I S R S C O T L A N D S R G E G E
 A B R A A M A R I A

SURGERY OF THE EAR

UNITED STATES I A W D M A A G D S T J I M K F N A R H P I R S M C
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 I R I R I R I L A N D S I R I H W O D

SURGERY OF THE NOSE THROAT AND MOUTH

UNITED STATES J C B C K T M L F H R D E T R O M J H R I C E I J A S N
 J F M C K T C F P M A R J N I D V N I I O S A U S T R A L I A A A J B R

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CONTENTS

I	Index of Abstracts of Current Literature	iii
II	Authors	iv
III	Abstracts of Current Literature	1 61
IV	Bibliography of Current Literature	62 86

CONTENTS—JANUARY, 1928

ABSTRACTS OF CURRENT LITERATURE

SURGERY OF THE HEAD AND NECK

Head

- DÉCHAUME M. and CONDAVIN I. Depressed Fractures of the Anterior Wall of the Frontal Sinus
- PORTMAN G. and DEBONS J. Surgical Intervention in Infections of the Lateral Sinus and Internal Jugular Vein
- SCHAFER A. J. and JACOBSON A. W. Mikulicz's Syndrome. A Report of 10 Cases
- LENOIR M. C. and DARCIAC M. Metallic Loops Through the Bone to Hold the Ascending Pterygoid in Fractures of the Lower Jaw. Their Use in a Case of Bilateral Retrodental Fracture
- SPRAWSON F. Further Investigation of the Pathology of Dentigerous Cysts with a New Treatment Based Thereon

Eye

- FINNOFF W. C. Dry Sterilization of Instruments
- KEY B. W. Protein Therapy in Glaucoma
- NOGUCHI H. Experimental Studies of Trachoma
- ROENNEL H. On the Mechanics of the Squint Operation
- GRISCOM J. M. Essential Atrophy of the Iris
- KIRBY D. B. The Cultivation of Lens Epithelium *in vitro*
- PAVIA J. L. and DUSSELDORF M. Cataclastic Luxation
- YUDKIN A. M. Bilateral Temporal Artery Loop of the Petal Artery
- WAGENER H. P. and GIPNER J. F. Arterial Spasm and Occlusion of Branches of the Central Artery of the Retina

Ear

- MAPRIOTT MCK. Pediatric Aspect of Otolaryngology
- BARLOW R. A. Does a Vitamin Deficient Diet Cause Deafness? Results of Animal Experimentation
- SHAMBAUGH G. I. Explanation for the Symptom of Paracusis Willisii. A Demonstration
- LIERLE D. M. Otitis Media in Infants
- DEAN L. W. Acute Otitis in Infants. Its Influence on Certain Systemic Conditions and the Influence of These Conditions on the Method of Treating the Co-existing Acute Otitis
- CHALMAN S. J. Tuberculosis of the Middle Ear with Special Reference to Heliotherapy

- SIDBURY J. B. Mastoiditis in Infants. A Report of 40 Operated Cases

Nose and Sinuses

- LAYTON F. B. The Relation of Nasal Polyps to Inflammation of the Accessory Sinuses of the Nose
- NELSON I. F. Meningitis of Nasal Origin. A Study in Surgical Anatomy
- LUTTO J. M. Frontal Sinus Empyema in Young Children with Several Case Reports
- THOMPSON G. H. Malignant Neoplasms of the Antrum
- VLASTO M. Meningitis of Sphenoidal Sinus Origin

Neck

- KESSEL L. and HYMAN H. T. Exophthalmic Goiter and the Involuntary Nervous System. VIII. The Course of the Subjective and Objective Manifestations of Exophthalmic Goiter in 50 Unselected Patients
- TROISIER J. The Basedow Syndrome 6 Months After Treatment with Iodine. The Role of Heredity
- HART V. K. Streptococcal Laryngitis. A Report of a Case with a Very Rare Complication

SURGERY OF THE NERVOUS SYSTEM

Brain and Its Coverings. Cranial Nerves

- NELSON P. F. Meningitis of Nasal Origin. A Study in Surgical Anatomy
- VLASTO M. Meningitis of Sphenoidal Sinus Origin

Spinal Cord and Its Coverings

- DELAGNIERE A. Tumors of the Spinal Cord
- POBINEAU. The Role of Lipiodol in the Surgery of Medullary Tumors

Peripheral Nerves

- BASSET A. Injury of the Upper Roots of the Brachial Plexus During a Laparotomy with the Patient in the Trendelenburg Position

Miscellaneous

- IRNFELD W. The Encapsulated Tumors of the Nervous System. Meningeal Fibrosarcoma. Perineural Fibrosarcoma and Neurofibroma of von Recklinghausen

SURGERY OF THE CHEST

Chest Wall and Breast

KIP J G B d f mtl Nll
 FRAS J A St ly f th Ml t B tly
 Whl S t d k v Bl k s t Mtl
 SCIT D a l ORBA C Pl Tetn t f
 Ca f th B t th a l tl ut Sl
 sq nt Ro th T tm t

Trachea Lungs and Pleura

LIBERT T d B ET M I d m I ll th
 I t t o l al l j t f Lp d l
 KL Z O C c f tl Tu h ti l p t p
 4C
 KRN C K A C f l r m v C n m f th
 Eff Sh B tl At l t l l l
 Hly T L d H f C W Tl f n th n
 l l A p t f l m v l m f th l ng

Heart and Pericardium

WIN v N d Sll v M l l
 tomy f P v p du v l f th
 Lt t t M o d l p t f
 N C s

Esophagus and Mediastinum

M R I Th P thology f (E ph g t a (D
 I tat of th (E ph g w th t A at m l
 St n t th C d O h e)
 W W W Thym St d
 REM R J d B l r n W W K tg D k
 d The p f th Th m n Ch l l

Miscellaneous

Hi C J T r tl l p th I t th i
 T m
 M L L Gt I l Df J q l Tl
 Th j f Re t f th I t T l b
 by th I t I t f S l c p f I t

SURGERY OF THE ABDOMEN

Abdominal Wall and Peritoneum

D m v C P r t t l p m t l St dy

Gastrointestinal Tract

A RFZ W C Th T tm t f n r I
 d est
 RO v O v P v C f l f t f G st c
 UJ I o v f
 D S St J W A t l f t f C t d
 Du d l U l
 ABADIE J Tl Hu d ed Gt t f Ul f
 the St m ch 64 f Wh h W r P l c tom
 ODELC C A P m R ct f th St m h
 L r fo t G G t d Du l n l U l
 PERSSON M f f Result f G t i R ect
 f C ncer

D N H B Ih St tu f G t Int t my n
 C t S g v
 C n v r A Pl l f t f B ll th I l e t f
 th St m h on th f n t d Struct of
 th l a c and on l t t l v b rpt
 I r I J I t t l e f th Sm ll and La ge I
 test n
 M c i l Sp l v x th I t t l O
 cl o

I A NTF A S j n l v x thes A ut II
 VANLAN T B nd O KIN v C J Sp n l v
 e thes a d l l u

I c r Sp al v a th I t e t l O cel

D u v P Sp l v x thes A t l l u

C t I Sp l v x thes II

I R I R J W a d G t f l v D t ul
 d D pl tu f th D d m w th R f
 t th Imp r t e f Ch l y t t th

I l u t n f Sympt m
 Br l C l f t l U l rs f th D l
 m

I r H C P f t d D d l U l a
 Cl ld v f Ag G t d d l Re e
 t l y

S L R v W v N pl m f th Ileo v l l

3 M E W l C B R I W B C R v W T O
 S i r C R t I f l d O th D
 u n C l t m

Br G v Th Sympt m tol ky d D
 f C f th L g l o l

3 ST v H B Th I r p t n f Sm ll B wel
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4 I v J M l l p f the R c t m

4 I H H Th T tm t f Ca m of th
 R t n l y I d t

I f f D B Th I c pl U d ly th
 S g v f C m f th R c t m

5 Live Gall Bladder Pancreas and Sple

H i W P t l C h t l v t nd It
 S g l T tm t v R f 26 C ses

H R l A Th l pty g f th G ll Bladd r
 A l p m t l St dy

K RALL B l d k N f C v v Iod
 C mp l f Ch l y t phy

B) W Som P t th l th l y f th
 G ll Blad

6 O i H R Sp t P pt f th G ll
 H d d r to th D od m

Jtp E S a d M c z s s H Ch l e t o f the
 G ll Bladd r

6 H R L J S Jr A l x p ment l St dy f
 Chol y t g t o t my d Ch l y to duod
 t m y

6 D B I C Ch l y t t t m y

6 S i l I Th Impo t n t Sug ry f th
 C t D t

I v C Pl Et l P t c Secr t

DES A B d R B J l l u p t r f
 P t Ham t c le to th f t l

7 Ca ly

SIEGEL I A L I u ctio n P a y

US S and SCOTT G M The Action of Iron Seeds on Tumor and Liver Cell of the Rat

Miscellaneous

BEGG R C The Urachus and Umbilical Fistula
TRUESDALE P F The Thoracopentoneal Operation for Hernia of the Diaphragm

GYNECOLOGY

Uterus

SHAW W I Wertheim's Hysterectomy for Carcinoma of the Cervix

Adnexal and Periuterine Conditions

SHAW W I Ovarulation in the Human Ovary Its Mechanism and Anomalies

Miscellaneous

JOHNSTON F R W Developmental Changes During Adolescence
LATON J H P Influence of the General Health on Menstruation
CLOW A I S The Prevention of Menstrual Troubles
CHATILLON F Sterility of Uterine Origin Diagnosis and Treatment
DOUGLAS E Sterility of Tubal Origin Diagnosis and Treatment

OBSTETRICS

Pregnancy and Its Complications

SIEGEL I A Interfunction in Pregnancy
PIERSON R N Fibromyomata and Pregnancy a Study of 50 Cases
HOFBAUER J A Study of an Undescribed Type of Premature Separation of the Normally Implanted Placenta
WILSON J ST G Three Cases of Rupture of the Uterus at the Site of a Previous Cesarean Section

Labor and Its Complications

HEWITT J TOWART D and BAIRD D The Relative Merits of the Instrumental and Medical Methods of Inducing Labor
GIBBERD G F An Investigation into the Results of Beech Labor and of Iliopelvic External Cephalic Version During Pregnancy with a Note on the Technique of External Version

Miscellaneous

WATSON B I The Responsibility of the Obstetrical Teacher in Relation to Maternal Mortality and Morbidity

GENITO URINARY SURGERY

Adrenal Kidney and Ureter

ILGUEL FFF and PALAZZOLI The Motility of the Renal Pelvis Studied in the Freely Excised Kidney
PERRIN W S A Normally Placed Right Kidney Possessing 2 Pelves and 2 Ureters Opening Separately into the Bladder the Center Part of the Kidney Between the Pelves Being Occupied by a Grawitz Tumor
PERRIN W S An Ectopic Kidney with a Triple Ureter Removed from a Man Aged 41 Years
HILLSTROM J Contribution to the Knowledge of the Etiology of Hydronephrosis
MARTIN LALAL and PASTEAU Small Painful Hydronephrosis Enervation of the Kidney and Nephropexy Late Results
DARGET R Recurrent Pyelonephritis in a Patient Operated upon for Renal Ptosis—Bifid Ureter
TAKAHASHI A The Health of a Patient 20 Years After the Removal of a Tuberculous Kidney
HUNT A C Papillary Epithelioma of the Renal Pelvis
QUINBY W C Elastic Surgery of the Renal Pelvis
ANDRE P Bilateral Ureterotomy for Calculus in a Young Child
STULZ F and STRICKER P Eight Cases of Suprarenalectomy in Juvenile Endarteritis Obliterans and Buerger's Disease

Bladder Urethra and Penis

PILLET The Lithogenic Action of Staphylococci by the Precipitation of Crystals of Ammonium Magnesium Phosphate in the Urine
PAPIN I and MICHON L Iliac Ureterostomy of the Remaining Kidney in Tuberculosis of the Bladder After Nephrectomy
TAKAHASHI A The Early Diagnosis of Pedicled Villous Cancer of the Bladder
MORSON A C The Treatment of Vesical Carcinoma by Radium Irradiation
CHAUVIN L Double Urethra Particularly the Posterior Varieties
NICHOLSON B B Urethral Diverticula

Genital Organs

CASARIEGO A G Prostatotomy in the Treatment of Urinary Retention in the Course of Acute Gonorrheal Prostatitis
WILDBOLZ H The Indication and Execution of Prostatotomy
TROELL A Prostatotomy—Some Remarks About the Indications Technique and Results
IBRAHIM A B The Relation of Funiculitis to Hydrocele in Egypt
STRICKER P and IRANCA A Multiple Fibromata of the Tunica Vaginalis
WESSON M B Backache Due to Seminal Vesiculitis and Prostatitis
WALKER K M The Treatment of Genital Tuberculosis in the Male

Miscellaneous

- REBELLION P The Lat nt Go ocoocus a d
Sp mo ultu
- JABIKIN I C d DIM d I Th Employ
ment f Pola Body D elop s St of the
C o cc the T atme t of G ccal
Inf ction
- BOYSFORD M E RICH T L a d J IN \ C M
A æ thes n U l gical s ge y

SURGERY OF THE BONES JOINTS MUSCLES
TENDONS

Conditions of the Bones Joints Muscles Tendons Etc

- SACAMORE L K a d HOLMES G W Endoth lal
M y l ma (Ew i T m)
- RO LANDS M J P he m toid A th t s Is It a
D fic cy D se
- CAREY E J Th A t my Ph l gy a d A
om l s of the Sp n

Surgery of the Bones Joints Muscles Tendons Etc

- IRATI M The Impo t nce of the Junctu æ Ten
d m i L s o s f th F te r T ndon f
the Fingers
- RYERSON E W Lam tomy
- \ JOSSERAND G a d POUZET F Late R s lts
f Atyp cal Ta ctom s i Diffus f be cu
l sis of th P ste o Ta s n Ch ld en
- I E B C A H Phys cal Th r py a d lts R l tion
t Orth ped c Surgery

Fractures and Dislocations

- KLEINSCHMID A \ w Meth d of T at t g Pse d
th ose
- COTTON F J A tific l Imp ct o Hp Fr ctur s

SURGERY OF BLOOD AND LYMPH SYSTEMS

Blood Vessels

- PORT A N G nd DESPOVS J S eg l i t
ntion n Inf ct o s of the Lat l Sn and
Int n l j gul v
- AUDIN A M Blat l Pr pap llary \ ul
L p of the R t al Art ry
- WAGENER H P a d GIPNE J F A ten l Sp sm
nd Occl o f B che of tl Ce t al A t ry
f th R tin
- VILL I E d MOUCHER An m of tl E
t m l lla Art ry w th J ap d E l to E
t r p t f th S c Aft H h l gaton f th
A t ry L tel ct o l Res lts
- \ CHOLSON B B Van e ve Et logy d
Tr tm t A Clin la d H t l g cal St dy
- MESEN A I j ct n T tm nt of v r v
and Th S qu l æ n th B s f s T t d
Ca
- BERNSTEN A Va ces of th L g E pecially f om
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Treatme t of Oblit ativ E da terit f the
L g

Blood Transfusion

- SIMBURY J B T a fu io in Childhood

SURGICAL TECHNIQUE

Operative Surgery and Technique Postoperative Treatment

- FLANOFF W C D y Ste iliz t ion f I trume t
- Anæsthesia
- MACLAIRE Sp l Anæ thes a i I testin l Oc
clus ion
- LAPOINTE A Sp l \ æsthes in Acute II
- VANLANDE BOPPE a d OKEND J Sp l A
æ th a d lleu
- PIROT Sp nal Anæsth i I test al O clu o
- DUVAL P Sp l A æsthe n Ac t lle s
- GUIBAL P Sp nal \ æsthes a n lle
- BOT FORD M E RICHETTI E nd JON SON C
M A æ th s a n U olo c l S rg ry
- SCHMIDT H Nitro Oxide Anæsthes a G m y

PHYSICOCHEMICAL METHODS IN SURGERY

Roentgenology

- ROINEAU Th Pôl f L p dol th Sug ry f
M dull ry Tum r
- SCOUTE D d ORBAA C Th T tm t f
C c of the B t ith a d ith ut S b
s q nt K tgn T e tm t
- L ER E nd B I ETV M I d m I ll v g the
I t b nchu l l j to f L pod l
- H DE T L d H ES G W Th Ro ntg
l al A p ts of Prum ry T m of the L g
- KEME J a d BEID N W W Roe tr D o
a d Th apy f th Thymus Chld
- KIRKIN B P nd KENDALL E C A New I d e
C mpo d f r Chol yst r phy
- BORDIER H Th v lu of D ath my n th T t
m t f R tg n Ulcerat n
- WINTZ H L The Act n f the \ R y th
E d c e Glands

Radium

- BOWI G H H Th Treatm t f C om of
the Re tum by I d t

MORSON A C The Treatment of Vesical Carcinoma by Iodine Irradiation

JONES S and SCOTT G M The Action of Iodine Seeds on Tumor and Liver Cells of the Rat

Miscellaneous

CHAPMAN S J Tuberculosis of the Middle Ear with Especial Reference to Heliotherapy

MAYLE R The Fundamental and the Clinical Aspects of Inlet Treatment with Especial Relation to Tuberculosis

DORE E ODDY H M FIDINOW A GAUVAIN SIR H and Others Discussion on the Uses and Limitations of Ultraviolet Light Therapy

MISCELLANEOUS

Clinical Entities—General Physiological Conditions

JOHNSTONE P W Developmental Changes During Adolescence

PATON J H P The Influence of the General Health on Menstruation

CLOW A L S The Prevention of Menstrual Troubles

STONE W S and CRAVER L I The Colloidal Iodine Treatment of Malignant Neoplasms

General Bacterial Protozoan and Parasitic Infections

BRUN P G The Respective Value of Certain Clinical Signs and Certain Laboratory Examinations in the Diagnosis of Echinococcosis According to the Findings in 250 Cases Treated Surgically

Ductless Glands

WINTZ H L The Action of the X Rays on the Endocrine Glands

Surgical Pathology and Diagnosis

IRASER J A Study of the Malignant Breast by Whole Section and Key Block Section Method

WATT J C The Deposition of Calcium Salts in Areas of Calcification

AUTHORS

OF THE ARTICLES ABSTRACTED IN THIS NUMBER

- Abadie J 17
 Allen E A 54
 Alvarez W C 16
 André I 40
 Bard D 36
 Barbellon P 4
 Bariety M 11
 Barlow R A 5
 Bas et A 10
 Be g R C 31
 Belden W W 4
 Be ntsen A 5
 Boppe 19
 Borsier H 58
 Botsford M E 46
 Bowin H H 25
 Boyd W 27
 Brenner F C 1
 Brindley G A 23
 Brown G E 54
 Brun R G 60
 Carey E J 45
 Casariego A G 4
 Chapman S J 6
 Chatillon F 33
 Chauvin F 4
 Ciminata A 8
 Clow A F 5
 Condamin F
 Cotton F J 0
 Craver L F 60
 Dan ey St J W 1
 Darcussac M
 Darget I 9
 David A 1
 Dean L W 0
 Déchaume M 1
 Dela énière Y 9
 Desjardès R 1
 Desplas B 30
 De pon J
 Devine H B
 Diamond L 45
 Dore E 58
 Douay F 33
 DuBo e F G 28
 Dusseldorf M 4
- Du al I 21
 Edinow A 55
 Elot F Jr 8
 E J 35
 Finnoft W C 3
 Franck A 44
 Fra e J 11
 Freiberg A H 49
 Gabriel W B
 Gau ain Sir H 5
 Gibbe d G F 36
 Gagner J I
 Godon Wat on St C
 Graham F A 2
 Griscom J M 4
 Guital P 1
 Hamneck R A 6
 Hart A K 8
 Hell ton J 39
 Heuer G J
 Hevitt J 36
 Hofbauer J 3
 Holme C W 1 4
 Ho sley J S Jr 5
 Hughson W 26
 Hunt A C 39
 Hyde T I 2
 Hyman H T 7
 Ibrahim A B 44
 Ivy A C 30
 Jacobsen A W
 John on C M 46
 Johnstone P W 3
 Jude F S 8
 Kendall E C
 Ke el L 7
 Key B W 3
 Kirby D B 4
 K rlin B I 7
 Klein chmidt 49
 Klotz O
 Kopp J G
 Kornblum K 12
 Lamkin E C 45
 Lapointe A 19
 Larimore J W 21
 Layton T B 6
- Le neu 35
 L normant C
 Libert J
 Lierle D M
 Lupton I M
 Lynch J M
 Mallet-Cuy P
 Marnott M K 5
 Martin Ia l 1
 Mauchai e 9
 Mayer I 8
 Mei n A
 Mntzer S H 8
 Mi hon F 40
 Miles W I
 Moore I 3
 Morson A C 41
 Mouchet 5
 Neill T E
 Nelson I F 1
 Nichol on B I 4
 No uchi H 3
 No -Jo erand G 41
 Oddv H M 55
 Odelbe g A
 Okinczyk J 9
 O baan C 11
 Ow n H R 4
 Lala zoli 38
 Iápin I 4
 Pasteau 19
 Iaton J H I 3
 Pavl J L 4
 Ientfield W 0
 Pe in W S 38
 Ier son M 17
 Pfeiffer D B 6
 Picot 19
 Pie son I N 3
 Pillet 40
 I o tmann G
 Pototchni G 1
 Pouzet F 40
 P ati M 48
 Qu nby W C 40
 Reme J 14
 R ahetu F 46
- Robineau 9
 I olun on A P 16
 Roenne H 4
 Roux Berger J I 30
 Rowlands M J 4
 Rowl nd R I
 I uss S 58
 Ryer on F W 49
 Schaffer A J
 Schmidt H
 Schoute D 1
 Scott C M 58
 Shambaugh G I 5
 Shaw W 3
 Shaw W F 3
 Sherwood W A 2
 Shipley A M 3
 Siddbury J B 6 55
 Siegel I A 35
 Sp awson E
 Stone H B 4
 Stone W S 60
 Stricker I 44 54
 Stulz I 54
 S eet J I 29
 Sycamore L K 4
 Takahashi A 39 40
 Thompson C H
 Towa t D 36
 Troell A 44
 I ouisier J
 Truesdale P E 3
 Vanlande 19
 Villechai e 52
 Ala to M 9
 W a ener H P 5
 Walker K M 45
 Wasson W W 4
 Wat on B P 36
 Watt J C 6
 Wes on M B 45
 Wildbolz H 42
 Wil on J St G 36
 Winslow N 3
 Wintz H I 60
 Y dkin A M 4

EDITOR'S COMMENT

TO readers of this journal it is hardly necessary to emphasize the importance of Fraser's study of malignant disease of the breast which appeared in the September issue and which is briefly abstracted on page 11. With the aid of whole sections through the breast and of paraffin sections of many different areas of the breast tissue Fraser studied the virgin al, the senile, and malignant breast with particular reference to the epithelium in different activity of the parts of the glandular system, to the types of tumor growth present, and to the manner of dissemination of cancer cells. That different types of tumor may be found in the same breast, that dissemination of cancer cells by way of the lymphatics takes place primarily through a central group of lymphatics which pass vertically to the deep fascia and then extend centrifugally, and that the duct system is an important route of dissemination for cancer cells are a few of the important facts stressed in Fraser's paper. To the surgeon interested in the subject of mammary carcinoma this paper cannot help but prove stimulating and valuable.

Winslow and Shiple's report of ten cases of pericarditis, myocarditis, pericardium, and review of 118 cases from the literature (p. 13) emphasize the possibility of successful surgical treatment in a form of infection frequently considered as hopeless. The cause with which the pericardium may be exposed by the parathyroidectomy, the tolerance of the heart for drainage tubes in the pericardial sac, and the irrigation of the sac and the importance of resection, the presence of a pleural effusion and of protecting the pleura during operation are some of the important points emphasized in this interesting paper.

A number of papers relating to various phases of gastro-intestinal surgery abstracted in this month's issue of the ABSTRACT are worthy of special mention. Ellis's review of the causes and

treatment of intestinal fistulae (p. 18) and the discussion following his paper are helpful contributions on what is frequently a difficult surgical problem. The reports of Mauclair (p. 19) of Lapointe (p. 19) of Vanhilde Boppe and Okinczyk (p. 19) and of Picot (p. 19) upon the use of spinal anesthesia in intestinal obstruction help to answer the questions which have arisen in the minds of those who have read the somewhat conflicting reports of the results obtained from the use of spinal anesthesia in acute ileus. The authors mentioned stress the possibility of fatal toxic absorption when a considerable quantity of retained intestinal content is suddenly released by relaxation of the obstructed bowel, the possibility of the further reduction of the blood pressure in cases in which it is already near the danger point, and the false security engendered by evacuation of intestinal contents in cases in which the cause of obstruction still remains. The discussion by Miles, Gabriel, Gordon, Watson, Lowlands, and others on colostomy (p. 22) the experiments of Stone (p. 4) on the substitution of small bowel segments for large and the resume by Iseffer of the principles underlying the surgery of carcinoma of the rectum (p. 6) are helpful contributions on the technique of the surgical treatment of pathological conditions involving the large bowel.

The experimental studies of Nozuchi on trachoma (p. 3) of Hamrick on the emptying of the gall bladder (p. 26) and of Ivy on the external secretion of the pancreas (p. 30) Pierson's clinical study of 50 cases of pregnancy complicated by fibromyoma, and Cotton's recommendations as to the treatment of fractures of the neck of the femur by artificial impaction (p. 50) are a few of many other important papers abstracted in this month's issue of the INTERNATIONAL ABSTRACT OF SURGERY.

INTERNATIONAL ABSTRACT OF SURGERY

JANUARY 1928

ABSTRACTS OF CURRENT LITERATURE SURGERY OF THE HEAD AND NECK

HEAD

Dechambre M and Condamin F Depressed
Fractures of the Anterior Wall of the Frontal
Sinus (1) *infractures de la paroi antérieure du
sinus frontal* *Ly chir 1927 1 (1)*

Depressed fractures of the anterior wall of the frontal sinus occur more frequently in males than in females and are usually due to direct trauma caused by firearms spikes falls blows or kicks There may be damage to the supraorbital nerve dura brain venous sinuses walls of the orbit frontal or oculomotor nerves submaxillary sinus ethmoidal sinuses nasal cavity or frontonasal duct

The symptoms may be slight but the location of the lesion and the associated deformity may suggest the diagnosis A diagnostic sign of importance is prolonged unilateral epistaxis There may be slight edema of the eyelid periorcular ecchymosis and crepitation Subcutaneous emphysema is not very common but is a valuable sign The escape of cerebrospinal fluid occurs only when there is injury to the dura As a rule there is no loss of consciousness at the time of the injury

If treatment is not given a pneumatocele meningitis osteomyelitis or suppurative with nasal complications may occur It is not unusual for the skin to be broken Other possible complications are pachymeningitis meningitis and cerebral abscess The prognosis is usually good but depends upon the time at which treatment is given Late complications may occur

The treatment is simple It should be given for all injuries regardless of their surmised extent In the authors cases an incision is made over the sinus and all bony spicules and foreign bodies are removed The whole sinus and the frontonasal duct are then explored Closure is effected without drainage but in some cases a pack may be left in for forty eight hours Few or no dressings are applied Pressure on the wound must be avoided If a depression persists after this treatment a graft of fat

or an osteoperiosteal graft may be tried Metal and rubber plates are to be condemned

If complications (sinusitis fistula etc) develop after the operation the wound should be re-opened and a search made for the source of the trouble If the frontonasal duct is closed an attempt should be made to open it If this fails some operative measure such as the Ogston Luc or Guisez procedure may be tried or an attempt made to obtain fibrous obliteration of the cavity

A number of cases are reviewed from the literature and three new cases are reported

MICHAEL I MASON M.D

Portmann G and Despons J Surgical Intervention in Infections of the Lateral Sinus and Internal Jugular Vein (1) *Intervention chirurgicale dans les infections du sinus latéral et de la veine jugulaire interne* *Pei de cl 1927 xlv 244*

The history of surgical operation in phlebitis of the lateral sinus and internal jugular vein is reviewed since Zaufal first practiced ligation lavage and drainage of the internal jugular in 1880 In the authors operation the first stage is a mastoidectomy and the second stage is incision and curettage of the lateral sinus An incision is made along the anterior border of the sternocleidomastoid beginning at the hyoid bone and ending a finger's breadth above the clavicle and a double ligature is applied to the internal jugular below the area of phlebitis and below the thyrohyoid trunk if it is thrombosed The lacerated foramen is then trephined through the mastoid incision the bulb of the jugular being exposed The mastoid and cratoid incisions are then united the whole trunk of the jugular to the bulb being exposed and the vein is sectioned between the two ligatures The resected fragment is from 7 to 8 cm long

On the completion of the resection the bulb is tamponed with iodoform gauze and a drain is introduced and brought out at the lowest point of the wound

After the operation the wound is irrigated with physiological salt solution and dressed every second day. If there is too much suppuration Dakin irrigation is done every three hours.

The results of the operation are good. A case is reported in detail. Re-creation of a part of the jugular does not seem to have any mysterious effects than simple ligation. The author is unable to avoid section of the external branch of the pterygoid artery, but it did not cause a symptom. There was little atrophy of the muscle. Electrical examination showed that motility was not completely abolished. The aesthetic result was good; the ear was almost exactly in the carotid groove and did not show very distinctly.

The treatment of thrombophlebitis of the internal jugular vein is strictly surgical and operation tends to become more and more rational. The object is not simply to drain the focus of infection but to remove it.

ALGER C. M. A. M.D.

$$\text{ULDR} \propto (M - M_D)$$

Sci after A J and Jacob en A W M kul z s
Synd ome A Report of 10 Cases 17 J D
Ch ld o

The authors report to call historical and up-
plement them by photograph of several of the
patient

Four of the patients had lymphatic leukemia—3 children with the acute form and 1 adult with the chronic form. All died from the same time after they were first seen. One patient had lymphatic coma and died 3 years after the appearance of enlargement of the alveolar gland. Another suffered from the malaria for his illness. He died of the malarial fever. The patient died of the malarial fever. The patient died of the malarial fever.

The 4 other patients must be classed as suffering from Mikulic's case proper as 10 of 11 definite etiological agent could be demonstrated 11 of them 11 of the possible causative factors were left excluded. The 3 others a limited syphilitic infection had caused the primary infection in a positive Wassermann reaction of the blood serum at the time of examination. Syphilis as present also in the other 2 adults the patient with lymphosarcoma having a positive Wassermann reaction and the adult with leukemia giving a definite history of the infection. However in the present state of our knowledge it seems reasonable to assume that syphilis was the cause of the syndrome of these 4 patients. 1 has not yet recovered and died of pneumonia shortly after admission to the hospital. With regard to the 2 other no information is obtainable. Maternal pathological study was obtained in only 3 of the cases.

In the cases in which histological factors can be found with any degree of assurance—those of so-called Mikulicz disease—the pathological picture is of a type. There may be either an increase in the lymphoid elements in the gland—diffuse in small aggregations or both—or a hyperplasia of the connective tissue elements with ultimate diffuse

scarring. The latter is considered by many to be the end stage of the former.

The authors discuss Howard's and von Brunn's classifications but suggest dividing the conditions into 2 large groups: a symptomatic and an idiopathic as follows:

1 Mikulicz disease (a) familial (b) Mikulicz disease proper

Mikulicz syndrome (1) leukaemia (b) tuberculo (c) syphilis (?) (d) lympho sarcoma (e) tox c (lealliodles etc) (f) gout (?) and (g) febrile uveo parot lea sub chronica

CARL B STEINKE M.D.

Le mant C and Darcissac M Metall c Loops
Through the Bone to Hold the Ascend
R ml n Place in Fractu es of the Lo er Jaw
Their Use in a Case of Bilat r l Retrode tal
F acture (L p d de mét li q e trans
t t s d l s f ct d ull f i e s
l pl t d n n s d f ct e d uble rétro
d t d l mach f r e) B ll et mêm
So t d cl 9 7 l 5 3

The method described was used in a case of bilateral fracture of the lower jaw back of the teeth in a man 45 years of age who sustained the injury in a fall from a bicycle. The horizontal part of the lower jaw containing the only 6 maxillary teeth had fallen forward, that the direction of the teeth was horizontal. On the right side the fracture was at the angle of the mandible on the left side at the mental ramus.

S on afte the ac id t a metallic ligature was
 ppl ed to fix the ant rior fragment to the middle
 right upp r is r 1 week late under genera
 inar th the ski a inci ed lon the posterior
 bord f the ja a hle y as bo ed at the angle
 n e r h ide 3 mm fr m the elg and a copper v i e
 of the t e u lly empl y e l i surge y as passed
 thro gh the l o l an t w i t t o form a loop The 2 l
 p r e d together ith a p e c e of stro cloth
 Bv t v ng th cloth t htlv over tampons on the
 n e g e of the neck v r t ong anterop terior trac
 t i n as p l u e d o the ascending ram Still
 tr n g traction s p r o l c l on succeeding days
 by h ng the fattent op his outh as wide as
 n b l e s t o e r me the a t r i o n of the levators

After the fifth day no intra-buccal apparatus was necessary and on the thirteenth day the loops were removed and the patient discharged with almost complete consolidation. **MURIEL C. MCGILL, M.D.**

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 der Universität
 Bonn
 1978

Sprayson contend that the sequela of caries in deciduous teeth are: no difference from those occurring in permanent teeth but a less often seen because of the much shorter time the deciduous teeth remain in the jaw. The only histological difference between the granulomata on

deciduous and permanent teeth is that in the former there are much grosser masses of epithelium probably because of the greater vascularity of that part during the active tooth forming and tooth absorbing period and the greater youth and activity of the epithelial cells involved.

The new features of the operation described are the preservation of the tooth involved in the cyst and the retention of a considerable portion of the cyst lining. The operation is simplified into opening of the cyst cavity freely enough to merge it into the buccal cavity. Drainage then becomes almost automatic and lavage is facilitated. The cyst lining is not removed because it is epithelial and therefore protective. If it were removed there would be considerable risk of damage to the involved permanent tooth which it is desirable to conserve. There would be also a very much larger raw surface open to infection and the absorption of toxins after the operation and there would be more hemorrhage and pain. There does not seem to be much object in removing one epithelial lining when the desirable ultimate result is that another epithelial covering shall grow in from the edges of the wound and replace it. The new operation is much simpler and shorter than the old procedure and does not require picking of the wound to arrest hemorrhage. Sprawson is aware that similar retention of the cyst lining is occasionally practised in the treatment of dental cysts. This treatment conserves the permanent tooth.

The author reports 4 cases in which the new operation was performed. The patients were 9, 9, 6 and 8 years of age. In every case the permanent tooth was saved.

In conclusion the author claims to have demonstrated the following facts:

1. Granulomata occur on deciduous teeth.
2. Dental cysts occur on deciduous teeth.
3. When dental cysts occur on deciduous teeth they may envelop adjacent unerupted permanent teeth.
4. Cysts on deciduous teeth may obstruct development or misdirect the eruption of adjacent permanent teeth.
5. On the removal of the obstruction eruption of the underlying tooth may be resumed.
6. When in the process of growth a dental cyst envelops an unerupted tooth a dentigerous cyst is produced.

Sprawson has attempted to prove only that dentigerous cysts frequently and indeed usually arise from septic deciduous teeth—not that they always do so.

The article contains several roentgenograms, illustrations of serial model and photomicrographs of sections.

The dental cyst, dentigerous cyst, cyst of eruption over a deciduous tooth or a permanent tooth which has no predecessor and the cyst of eruption over a permanent tooth which had a deciduous predecessor are discussed briefly. CARL R. STEINKE, M.D.

Tinnoff W. C. Dry Sterilization of Instruments *1: J. Ophth. 19:7:35 & 598*

In the dry sterilization of instruments recommended by the author the instruments are placed in suitable containers which are wrapped with 2 layers of heavy wrapping paper and labeled. They are then placed for half an hour in an electric sterilizer automatically controlled by a thermostat which keeps the temperature at 160 degrees C (320 degrees F). On their removal they are kept in the paper until they are used.

It has been found that a temperature of 121 degrees C (250 degrees F) for 40 minutes will destroy practically all bacteria and spores.

The advantages of the method are that it preserves the instruments from rusting, the instruments are subjected to less handling and accordingly there is less chance that sharp points and edges will be dulled and less chance of infection. More thorough sterilization is obtained and the possibility of carbolic burns of the eye are avoided.

Tinnoff has used the method for years. He recommends it not only for ophthalmic instruments but also for spinal puncture needles, syringes and instruments for emergency use in the office or elsewhere.

The only objections to the procedure are that several sets of instruments are necessary and they must be prepared a day or so before they are to be used.

THOMAS D. ALLEN, M.D.

EYE

Key B. W. Protein Therapy in Practice *1m J. Ophth. 1927:35 & 606*

Key emphasizes the beneficial results to be obtained from the use of foreign protein, especially antidiabetic serum, in hypopyon keratitis in infection following penetrating wounds of the cornea and iritis. In 3 cases of iritis remarkable clearing was noted following such treatment. Key uses protein therapy always in addition to the usual local measures.

THOMAS D. ALLEN, M.D.

Noguchi H. Experimental Studies of Trachoma *Arch. Ophth. 19:7:161 & 43*

Material removed from the conjunctiva of known cases of trachoma was injected subconjunctivally into monkeys without producing any reaction. When the same material was cultured on ordinary media a growth of staphylococcus bacillus xerosis (a sarcina-like organism) and a small motile gram-negative bacillus was obtained. None of these produced trachoma-like lesions in monkeys. The active organism was found to be a small pleomorphic bacillus-like organism which was motile only under certain conditions and grew on a semisolid medium containing fresh animal serum and hemoglobin. Of 1 monkey inoculated with this organism a trachoma-like inflammation resulted in all but 1. In 1 animal scar formation began 7 months later. Three recovered after having conjunctivitis for

A review of the literature on similar conditions is given. The author agrees with Leber and von Hippel that the abnormality is not due to inflammation and is not a relic of the hyaloid artery.

SAMUEL A. DURR, M.D.

Wagener H. P. and Gipner J. F. Arterial Spasm and Occlusion of Branches of the Central Artery of the Retina. *Am. J. Ophthalm.* 127:358, 1950.

The authors review the history and findings in 2 cases of spasm in a branch of the central retinal artery and compare them with the history and findings in 3 cases of arterial thrombosis. The first condition they contend never leads to permanent blindness; its characteristic picture is complete invisibility of the artery distal to the spasm during the spasm and reversion to normal subsequent to the spasm.

THOMAS D. ALLEN, M.D.

EAR

Marriott Mck. Pediatric Aspects of Otolaryngology. *Ann. Otol. Rhinol. & Laryngol.* 59:7, 1950.

Marriott states that when an infant has been taking a suitable food in adequate amounts and fails to gain, the food is not at fault and an infection must be sought. The infection most frequently responsible for nutritional disturbance is otitis media. The findings in this condition, particularly in the cases of extremely malnourished or athreptic infants, are slight changes in the drums (ragging of the posterior superior canal wall just external to the tympanic membrane) which often can be seen only with the electric otoscope. Usually immediate antrotomy under local anesthesia brings about amelioration of the symptoms (diarrhea, vomiting, and a slight increase in the temperature and leukocyte count) followed by recovery.

In children beyond the age of infancy, sinus infections are frequent and give rise to a wide variety of symptoms. Tuberculosis is often simulated but treatment of the sinuses rapidly clears up the picture. Chronic bronchitis with bronchiectasis may be produced or there may be repeated attacks of abdominal pain. In some children with sinus disease the symptoms of asthma are noted. A definite sensitization predisposes to sinus infection on account of the hypertrophic condition of the membranes. Rheumatic endocarditis, chorea, and articular rheumatism are frequently accompanied by sinus disease, and clearing of the sinus infections is the best means of preventing their recurrence. Nephritis is one of the most important and distinct manifestations of nose and throat infection and is practically always to be found in nephrosis. In glomerular nephritis there is usually a streptococcal infection.

The general diagnosis of sinus disease may be made by the pediatricist but to determine the particular sinus involved examination by an otolaryngologist is necessary.

MINOR R. WITZ, M.D.

Barlow R. A. Does a Vitamin Deficient Diet Cause Deafness? Results of Animal Experimentation. *L. A. J. Otol.* 19:7, 1950.

The author carried out a series of experiments on rats extending over a period of two years to determine the relationship between rickets and deafness. The results indicate that even in severe cases of rickets the calcium content of the bony capsule is not appreciably altered. In rats on a diet deficient in Vitamin D there was no demonstrable loss of calcium in the bony labyrinth although the long bones showed a definite loss in calcium and an increase in canalization. The comparative study of roentgenograms of normal and rachitic rats showed no loss of calcium in the latter.

From these findings it appears that rickets is not an etiological factor in deafness and that there is no reason to believe that a child who has had rickets is likely to become deaf.

JOHN C. FRANKLIN, M.D.

Shambaugh G. I. Explanation for the Symptom of Paracusis Willisii: A Demonstration. *Am. J. Otol.* 19:14, 1950.

In the cases of persons with normal hearing the acuity of hearing is decreased by extraneous sounds. This decrease is apparent throughout the tone range but is greatest for the lower tones. A defect in hearing due to stapes fixation is increased rather than decreased by extraneous sounds.

In noisy surroundings the person with normal hearing tends to raise his voice to overcome the handicap but the person who is deaf because of stapes fixation does not experience the handicap because the deafness for low tones effectively shuts out most of the extraneous sound. Accordingly the handicap experienced from obstructive deafness may be less than that experienced by the normal person as the result of extraneous sounds. This explains why while riding on a train for example a deaf person often hears the voice better than a person with normal hearing.

JAMES C. BRISWELL, M.D.

Lierle D. M. Otitis Media in Infants. *Ann. Otol. Rhinol. & Laryngol.* 59:7, 1950.

A syndrome of intestinal disturbances produced by otitis media in infants has been described frequently during the past years and the author here reviews a group of 100 cases. The infant with this condition becomes critically and suddenly ill with marked dehydration, loss of weight, high fever, diarrhea, and periods of syncope. Examination of the ear shows drumhead changes or bulging of the posterior superior walls. In 92 of the cases reviewed these findings were bilateral and there was associated paranasal sinus disease.

The prognosis is dependent upon the duration of the infection, the presence of other systemic complications, and the virulence of the organism.

Repeated myringotomies may be necessary for drainage but when these are unsuccessful and there is bulging of the posterior superior wall a mastoidectomy is indicated.

tomy is indicated. This should be done under chloroform oxygen anaesthesia with a maximum time limit of 5 minutes. GORGE R. M. ALLIFF M.D.

De n L. W. Aute Otitis in Infants Its Influence on Certain Systemic Conditions and the Influence of These Conditions on the Method of Treating the Combined Acute Otitis. *Id.* 1917 97

In Dean's opinion the symptoms which lead to the discovery of otitis in infants and the conditions which determine the choice of treatment are more often pediatric than otologic. Refusal of food dehydration diarrhoea and loss of weight may be factors determining whether myringotomy or mastoidectomy should be performed.

In the treatment the otolaryngologist and pediatrician must work in the closest cooperation. The pediatrician should not confine his work to the general treatment of the child but should enter actively into the discussion of the need for myringotomy or mastoidectomy.

As paranasal sinus disease is often associated with acute otitis treatment for both conditions is usually advisable. It is often difficult to decide which of the two is most influential in causing the systemic disease. J. S. C. B. S. L. M.D.

Chapman S. J. Tuberculosis of the Middle Ear with Especial Reference to Helicobacter. *Id.* 1917 97 63

In his anatomical practice the author sees from 4 to 6 cases of tuberculous otitis media per 100 patients and contrary to the usual findings this condition is discovered as a rule in adults. In most cases it begins insidiously with auricular discomfort. Later there is a seropurulent discharge. Inflammation of the drum is ordinarily of a galeal type. In adults mastoid tenderness is uncommon. In mixed infection is present. Facial paralysis is fairly common complication but labyrinthitis and meningitis are infrequent.

The diagnosis is made from the characteristic onset the middle ear finding the character of the presence of an adjacent or embolus tuberculous focus the discovery of tubercle bacilli with Lischke on examination of smear or guinea pig inoculation and the finding of pathological examination of excised tissue.

Boric acid irrigations are employed when the discharge is profuse but later simple wiping out of the canal will suffice. Helicotherapy is of definite value and worthy of trial in chronic cases. The sunlight is reflected by means of a modified solar laryngoscope. The patient treats himself beginning with a half minute exposure once or twice daily and increasing it half a minute a day up to 5 or 6 minutes. The author's opinion on his results has been sufficiently encouraging to warrant the continuation of heliotherapy.

G. E. R. McALLIFF M.D.

Sidbury J. B. Mastoiditis in Infants. A Report of 40 Operated Cases. *S. H. M. J.* 1917 173

Forty surgically treated cases of mastoiditis in infants are reviewed. Twenty of these cases presented the picture of an acute gastro-intestinal intoxication. The primary examination of the ears was frequently negative. Repeated examinations demonstrated a gradual loss of normal luster of the drum with marginal injection. Invariably there was some sagging of the posterior superior canal wall.

The author concludes that atresia and anhydremia in infants are often the result of infection of the mastoid antrum. Whenever any sign of infection is noted repeated otologic examinations should be made and free drainage established. Close cooperation between the pediatrician and otologist is essential. W. M. PARSONS M.D.

NOSE AND SINUSES

Layton T. B. The Relation of Nasal Polyps to Inflammation of the Accessory Sinuses of the Nose. *P. C. K. S. C. M. D. L.* 1917 174

In Layton's opinion polyps indicate a special type of inflammation of the mucous membrane. They are usually associated with catarrhal inflammation. To cure this condition all of the diseased area must be removed. Resolution of the inflamed mucous membrane must be secured. In the maxillary sinus drainage and ligation may be sufficient but in ethmoiditis of the type under discussion the removal of the entire diseased area is necessary.

Layton accepts Hajek's classification of sinusitis. He believes that the two chronic types are distinct. They are (1) a different wall, an separate courses and do not change into each other. When an antrum full of pus opened the mucous membrane is rarely polypoid. While a suppurative sinusitis may be superimposed on a catarrhal inflammation this is not the same as the changing of one process to the other. The causative differences between chronic catarrhal and chronic suppurative sinusitis have not been explained as yet.

The author has operated upon three cases by an unusual external technique. The nasal process of the upper maxilla was removed to ether with the ethmoid bone and the os planum of the ethmoid with all of the ethmoidal cells back to the body of the sphenoid.

W. M. PARSONS M.D.

Nelson R. F. Meningitis of Nasal Origin. A Study in Surgical Anatomy. *Id.* 1917 97

Meningitis of nasal origin is a rare disease before which practically all surgeons stand hopeless and inaction. But as a sufficient number of cases have been reported there seems promise of a useful method of surgical attack. He has described operation by which exploration of the frontal ethmoid and sphenoid can be done simultaneously under local anesthesia in a practically bloodless field and a complete safe and sure removal of their

nasal walls accomplished under direct inspection and from the closest possible range

This external fronto ethmoidectomy shows that the subarachnoid spaces of the cranial fossa are clearly and safely accessible through the roofs of the ethmoid and sphenoid sinuses in front of the optic chiasm and that extension to this region of the accepted principles of surgery for meningitis of extramenigeal origin is feasible

GEORGE R. McJULIFF, M.D.

Iupton I. M. Frontal Sinus Empyema in Young Children with Several Case Reports. *I. J. Otol. Rhinol. & Laryngol.* 1927 XXXVI 693

The author reports three cases of acute frontal sinus empyema in children about 11 years of age which was characterized by the rapid development of sinus pain and oedema over the sinus necessitating a radical external operation. A routine study of roentgenograms shows that the frontal sinuses are more often of surgical importance in children than is generally believed and that in many cases of meningitis in children the condition is probably the result of unrecognized sinus infections.

Prevention is to be attempted by keeping the nose free from secretions and keeping it open by such measures as suction, the use of ephedrin and removal of the anterior tip of the middle turbinate. Intranasal operations help but little, a thorough ethmoid extirpation permits approach to the floor of the frontal sinus.

MANFORD P. WALTZ, M.D.

Thompson G. H. Malignant Neoplasms of the Antrum. *Int. J. Otol. Rhinol. & Laryngol.* 1927 XXXVI 715

It is a common belief that malignant neoplasms of the antrum are rare, but a recent review of the literature precludes this assumption. Malignant growths in the antrum are believed by many to have their origin in previous abnormal conditions such as disease in a tooth socket, the degeneration of a fibrous polyp or papilloma, or injury by trauma. One observer, however, failed to find anything approaching a precancerous condition or any previous nasal condition in 30 cases.

The rapidly growing tumor fills the antral cavity and breaks through the wall of the nose or pharynx, causing pain, bleeding, and glandular involvement.

X-ray examination and transillumination are valuable aids in the diagnosis, but should not take precedence over clinical evidence.

The prognosis is usually very unfavorable. In the cases of children it is less unfavorable if the tumor can be thoroughly removed.

Formerly the treatment consisted mainly in resection of the maxilla, but the end results of this procedure were so extremely disappointing that it has now been practically abandoned. Of the great variety of surgical measures advocated today, all are practically modifications of the Caldwell-Luc or Moure technique. Additional treatment is given with the X-rays, diathermy, and radium.

In conclusion the author emphasizes that the rhinologist, the dentist, and other practitioners treating the nose and mouth must bear the possibility of malignancy in mind and endeavor to recognize such degeneration before it has advanced to a hopeless stage.

(FORCE P. McJULIFF, M.D.)

NECK

Kessel L. and Hyman H. T. Exophthalmic Goiter and the Involuntary Nervous System. VIII. The Course of the Subjective and Objective Manifestations of Exophthalmic Goiter in Fifty Unselected Patients. *Arch. Int. Med.* 1927 XL 314

The authors discuss the course of the subjective and objective manifestations of exophthalmic goiter in fifty unselected patients observed for five years without the institution of specific therapeutic measures. The treatment consisted in a diet of 3000 calories, the daily application of wet packs at a temperature of 75 degrees, the administration of 1 gr. of phenobarbital as a hypnotic, and the administration of from 5 to 30 minims of syrup of ferrous iodide three times a day to hasten involution of the thyroid gland.

Only thirty-one of the patients were followed closely; the others were lost sight of for various reasons. In none of those successfully followed did the subjective symptoms entirely disappear. These symptoms did not bear a constant relationship to the intensity of the disease, the basal metabolic rate, or the economic restitution. The symptomatic and laboratory findings are tabulated. In no case did the goiter entirely disappear.

The basal metabolic rates of ambulatory patients are given in tables.

From the patient's standpoint, social and economic restitution is most important. Economic restitution occurred for an average of fifty-two months in the fifty-seven month period of observation.

The purpose of this report is to establish a normal or control upon which future reports regarding various types of specific therapy may be based.

(C. O. HEIMDAL, M.D.)

Troisier J. The Basedow Syndrome 6 Months After Treatment with Iodine. The Role of Heredity. (Syndrome de Basedow six mois après une cure iodée rôle de l'hérédité.) *J. ill. et ém. Soc. méd. de hôp. de Par.* 9 7 juil 616

A 25 year old man with subacute rheumatism of the dorsal spine received during the month of March 1916 both iodine and salicylate therapy (8 perispiral or epidural injections of 2 cm. of lipiodol and 12 injections of 1 mgm. of salicylic acid). After months iodine was given by mouth together with colloidal sulphur until September when the rheumatism was much better and the administration of iodine was discontinued. In November the patient began to lose weight and after January 1917 developed the symptoms of exophthalmic

goiter—regular elastic diffuse thyroid hypertrophy bilateral symmetrical exophthalmos tachycardia tremor profuse sweats hot flushes frequent diarrhoea and marked emaciation Examination of the spine with the roentgen ray revealed iodized oil still present The patient was temporarily benefited by injections of the antithyroid serum of Coulaud

Although the incidence of Basedow's syndrome in patients treated with iodine is low Troisier believes that there is a possible relation between the iodotherapy and the thyroidosis On the other hand the iodine may have played a role secondary to the relative tendency to hyperthyroidism in the patient's mother also developed exophthalmic goiter even suicide by

WALTER C. BURKETT, MD

Holt V. K. Streptococcal Laryngitis Report of a Case with Very Rare Complications
Otol. All. L. 5, 1919, 78

Streptococcal laryngitis causing definite dyspnoea and stridor occur rather infrequently but must be borne in mind when a laryngeal infection is not definitely diphtheritic In the author's case the dyspnoea became so marked that intubation was done As this resulted in no benefit a tracheotomy was performed The tracheotomy gave immediate relief However despite all treatment the child died The larynx yielded practically pure cultures of non-hemolytic streptococcus The case was complicated by an aplastic anaemia which is especially rare in children
GEORGE R. McALLISTER, MD

SURGERY OF THE NERVOUS SYSTEM

BRAIN AND ITS COVERINGS CRANIAL NERVES

Wisto M Meningitis of Sphenoidal Sinus Origin
P c I o y S o M d l n d 1) x x 1763

Wrist states that as sphenoidal sinus infection is a rather frequent cause of purulent meningitis of the non epidemic type and is often associated with otitis media the sphenoidal sinus should always be examined at autopsy in a case of death from non epidemic meningitis and in the examination of the patient with otitis media.

SPINAL CORD AND ITS COVERINGS

Delageniere Y Tumors of the Spinal Cord (I
tums de la moelle) *J d r* 10 7 XVIII 510

Delageniere reviews 34 cases of tumor of the spinal cord in which operation was performed. In the case of a patient with signs of compression of the spinal roots or pain without definite cause, lumbar puncture is indispensable as it will prove the presence or absence of compression. The immediate injection of lipiodol will reveal the level of any condition causing compression and sometimes even its nature.

Thus, the compression of the spinal cord is not due to Lott's disease operation should be performed without hesitation. In cases of tumor the operative mortality is barely 0 per cent. In cases of perimedullary tumors it is only 4 per cent whatever the site of the neoplasm.

The late prognosis of intramedullary tumors (malignant gliomata) remains very poor. It is generally impossible to extirpate such growths but decompression and evacuation of the cysts sometimes brings about considerable temporary improvement.

Seventy-four per cent of spinal tumors are circumscribed perimedullary growths. In 76 per cent of the cases removal of the tumor enables the patient to resume his normal life and in 63 per cent it results in a complete cure.

Early operation gives incomparably better results than operation performed after the tumor has become evident clinically. If operation is not performed the condition will be fatal.

AUDREY G. MORGAN, M.D.

Robineau The Role of Lipiodol in the Surgery of Medullary Tumors (Le rôle du lipodol dans la chirurgie des tumeurs médullaires) *Bull. l'Instit. Nat. Cancer* 1967; 62: 1027-1038

Of 24 cases of perimedullary tumors (intradural in connection with the spinal roots or the surface of the cord) and 10 cases of intramedullary enucleable tumors only the first 4 were operated upon without a previous injection of lipiodol. In the others the

lipiodol indicated the upper and lower limits of the neoplasm. In cases in which the ascending and descending lipiodol were combined the X ray showed the tumor poles exactly. There were no failures.

In cases of diffuse tumors of the cord tracts of arachnoiditis and tumors of the dura mater errors resulted from faulty technique or incorrect interpretation of the X ray picture. Sicard reports false arrests of the lipiodol in subarachnoid migration. A total or partial arrest of lipiodol is significant only when it is constant on successive examinations. From this standpoint roscopscopy previous to roentgenography is of value. A satisfactory negative finding after lumbar injection followed by the inclined posture does not prove that injection by the atlo occipital route will be negative.

Robineux disagrees with Desgouttes as to the sterilizing action of lipiodol since he has found that wounds do not heal more aseptically when it is used. Also unlike Desgouttes he found no hyperemic action of lipiodol even when the injection was made only a few days before the operation. The vascular dilatation was due to the tumor. Moreover after the patient has been put down from the inclined position the lipiodol fell into the cul de sac and was not in contact with the tumor at operation.

Lipiodol remains in the spinal canal many months before it becomes encysted in the sacral cul de sac. In about 100 observations the lipiodol that was imprisoned in the lumbosacral region was found to be perfectly tolerated whether operation had been done or not.

In 1 case of spinal lesion in which clinical examination indicated a low dorsal localization but lipiodol was arrested much higher up and at operation no lesion was revealed at the low dorsal site but a pichymeningitis was found higher up it was evident that the lipiodol was arrested by the arachnoiditis but was not the cause of the condition.

Robineau has followed the evolution of subarachnoid injections of lipiodol by Sicard from the very beginning and believes that the method is harmless. The lipiodol test is subordinate to clinical examination but has helped to clear up many doubtful tumor cases that had been treated erroneously as Pott's disease, cardio-aortic syphilis, rebellious sciatica, etc. It has revealed the location of tumors more accurately and facilitated the early diagnosis of medullary tumors. When the diagnosis is made early, operation may be performed before the period of scars and urinary infection.

Since the discovery of exploration with lipiodol perimedullary tumors are operated upon 10 times more frequently than before and the operative mortality has been considerably decreased.

WALTER C BURKET M D

PERIPHERAL NERVES

Basset A Injury of the T₁₀ Upper Roots of the Brachial Plexus During Laparotomy with the Patient in the Trendelenburg Position (Léon de la sup du pl u bach la b u d l p t m p d de Tr nif g Bllitt S p d l 9 l 565)

A tall thin woman with a long neck and deep shoulders was operated upon in the Trendelenburg position for a large infected hematomal abscess on the left side. When she was seen a month after the operation she presented paresis and paralysis of the subclavicular and supraspinatus and serratus magnus muscles on the right side. She still had some pain but it was not severe. There was no disturbance of sensation.

The distribution of the lesions indicated that the roots of the brachial plexus were affected. The nerves of the medial and lateral cords of the plexus were probably involved by a hulairet on the operating table. Because of the patient's habitus the brachial plexus was more oblique, more superficial and less well protected than usual. It is difficult to say whether the lesion was caused by compression or stretching. It was a light and local lesion in the proximal part.

In the literature the reports of Munksgaard that he treated the lesion by stretching of the brachial plexus with the patient in forced abduction, the patient as if sitting on the table. He was surprised that the patient was not more frequent with arm stiffness in the arm.

There is all that had a number of other cases. In many of them the lesion was found by dissection but in some it was confirmed. He first thought that the patient was suffering from a retort of the operating table but he was not able to attribute it to the abduction. The patient was found to be the patient's arm, the patient's hand from the field of operation, the stage of excitement from the patient. It is a line of enquiry that the brachial plexus may be stretched.

BAUMGARTNER reported that once a paralysis of the trunk of the ulnar nerve due to pressure under a screw on the operating table.

OUVERDANNE stated that he had seen a case of paralysis of the brachial plexus from operative laceration of a congenitally high scapula.

In conclusion **Basset** said that he had seen his patient again two months after his report was written and the expected improvement in the paralysis had not taken place. **ANDERSON** and **McKENN**

MISCELLANEOUS

Leinfeld W The Encapsulated Tumors of the Nervous System Meningeal Fibrosarcoma Perineural Fibrosarcoma and Neurofibroma of von Recklinghausen *Sg G Obst 97 l 8*

The benign tumors of the nervous system are grouped histologically as (1) meningeal fibrosarcoma

tumors (2) perineural fibrosarcoma and (3) neurofibroma. The first two are fibroblastic but are easily distinguished because each retains the characteristic morphology of the tissue of origin. Only tumors of the last group contain nervous tissue.

The encapsulated tumors the most important group treated by the neurosurgeon include 30 per cent of the intracranial tumors and a relatively greater percentage of the spinal cord tumors.

The author reports upon thirty two encapsulated tumors the histological characteristics of which have been studied by the improved Del Rio Hortega and Cajal staining techniques. A description of the gross pathology of each group is given.

Neurofibromatosis of von Recklinghausen is a systemic disease often showing hereditary tendency. The pigmentation and hypertrophic changes of the skin are believed to be the results of wide spread thickening of the nerves. Congenital abnormality of the peripheral nervous system is thought to be a factor in the development of the neoplasms. In Trotter's opinion the presence of increased connective tissue about the nerve indicates that improper insulation of the fibers causes stimulation of the connective tissue. Slender collagen fibers of uniform calibre throughout are found in the tumors. Fibroblastic changes resembling the solitary fibrosarcoma and arising from the endoneurial connective tissue are sometimes discovered. These are attributed to irritation and are a source of confusion. Degeneration is common.

Intraneural fibrosarcoma are solitary encapsulated tumors usually found in a central location attached to the cranial nerve or the spinal nerve roots rather than to the peripheral nerves. Intracranially they are most often attached to the acoustic nerve. Histologically they are characterized by paladism and parallelism of nuclei and a tendency to form nuclear eddies and streams but the characteristic are not pathognomonic. The author agrees with Mallo's view that the type cell of the neuretheum tumor and of the endothelioma is the fibroblast. The origin of the perineural fibrosarcoma is the perineural endoneurial connective tissue.

The meningeal fibrosarcoma are always attached to the dura. They never invade the brain or cord but may invade the overlying skull causing the formation of osteosarcomas. They are believed to arise from the arachnoid or the under surface of the dura. There is a dense stroma continuous with the dura and the blood supply is from the dura. In slowly growing tumors collagen may be found but differs in its appearance from that in the other types. Isomorphous bodies and whorls indicate a close relationship to arachnoid granulations. Transitional areas between perineural and meningeal fibrosarcoma are found. The main difference is in the character of the collagen fibers.

The article contains excellent illustrations of the microscopic anatomy. **E. S. PLATT M.D.**

SURGERY OF THE CHEST

CHEST WALL AND BREAST

Kopp J G Bleeding from the Nipple (Le déversement sanguin du mamelon) *La chirurgie Scient* 19 7 lui 115

Of 181 cases of cancer of the breast there was bleeding from the nipple in 20 (11 per cent). In one fifth of them the discharge was present before the formation of the tumor or was the only sign of the condition. In 9 (45 per cent) cancerous degeneration of a benign tumor was very probable.

Of the 45 patients with a benign tumor of the breast had a bloody discharge. In 16 cases no tumor was distinguishable clinically although operation revealed a duct papilloma or a cystic condition of the breast both of which as is well known have a marked tendency to undergo malignant degeneration. Cessation of the bloody discharge is not a proof of recovery.

In all cases of bleeding nipple with or without a tumor the only treatment is partial or total removal of the breast. Partial extirpation is not sufficient in some cases and is therefore seldom recommended. Radiotherapy is not advisable as it is most uncertain in its effects.

Fraser J A Study of the Malignant Breast by Whole Section and Key Block Section Methods *Surg Gynec & Obst* 1927 xlv 66

Whole sections of the breast afford an excellent opportunity to study the complete mammary picture of breast carcinoma. The key block system of paraffin sections to ether with the whole celloidin section system is described.

Studies of virginal, marital and senile breasts demonstrate the activity of the acinar epithelium which lines the cul de sacs of the terminal ducts. Proliferation and retrogression of the acinar epithelium are related to the arrangement of the elastica. In the breast which is physiologically active the elastica does not enclose the duct terminations while in the senile breast it extends so as to seal up the duct termination. Several different types of tumor may occur in one breast.

Lymphatic dissemination of malignant tumor occurs by a vertical group of central lymphatics which extend centrifugally into the deep fascia. Later intramammary lymphatics open up. There is no evidence that the subcutaneous lymphatics play a part in the dissemination. The blood vessels and the duct system may be sources of dissemination.

A localized malignant tumor is associated with widespread secondary changes in the duct and the acinar system. These taking the form of an epithelial proliferation which ultimately becomes malignant.

J FRANK DOUGHTY M D

Schoute D and Orban C The Treatment of Cancer of the Breast with and without Subsequent Roentgen Treatment *La radiol* 1927 viii 239

From their statistics the authors conclude that we are justified in continuing to give roentgen treatment after operation for cancer of the breast that in fact we should not be justified in discontinuing such treatment. They believe that postoperative roentgen ray irradiation applied correctly will lessen the incidence of local recurrences. For further improvement however the closest co operation between the surgeon and roentgenologist is necessary.

TRACHEA LUNGS AND PLEURA

Libert E and Bariety M Iodism Following the Intrabronchial Injection of Lipiodol (Incident d'iodisme consécutif à l'injection de lipiodol intrabronchique) *Pull clin Soc m d d hôp de Lar* 1927 lvi 615

Libert and Bariety in 1926 saw 2 cases of slight intolerance to lipiodol after the intracricothyroid injection of 40 c cm of the oil for the study of bronchial dilatation. The injection was followed by an œdema localized on the face and neck, congestion of the face and lachrymation. After 4 hours these sequelae were greatly attenuated and soon disappeared. No disturbance of the general condition was noted.

WALTER C BURKET M D

Klotz O Cancer of the Lung with a Report upon 24 Cases *Canadian Medical Journal* 1927 xii 983

Postmortem studies have shown a marked increase in the incidence of carcinoma of the lung. In the period from 1878 to 1900 this condition was found in 0.08 per cent of autopsies, whereas in 19 it was found in 0.9 per cent. Malignant tumors of the lung constitute per cent of all malignant neoplasms.

In discussing the etiology of pulmonary carcinoma Klotz states that he has been unable to find anything in the occupation of his patients which might predispose to the condition. The influenza epidemic and gassing during military service may have been factors in its increase. Another possible factor is the new environment that is developed around the epithelial structures as the result of chronic diseases of the lung such as fibrosis, pneumonia and bronchopneumonia which cause considerable distortion of the parenchymatous tissues and of the bronchi leading to them. In such an environment cell metaplasia may readily occur with carcinomatous change.

The author attributes the high incidence of carcinoma of the lung among the miners of Schneeberg—75

per cent of the total from the high content of iron in the nickel and cobalt metal. As the concentration is less frequent in other mining districts it is not likely that pneumoconiosis alone. Klotz does not accept the view that smoking causes sufficient bronchial irritation to produce cellular metaplasia but believes that incomplete colonization of motor car fumes may be a factor.

In 3 of the authors the condition began in the bronchial mucosa. In only one case were there no metastases in distant organs.

A satisfactory classification of the tumor in the bronchial epithelium is possible because the cell may considerably in the same tumor. In the majority of the tumors the cell has an alveolar arrangement in cuboidal polygonal or ovoid and stratified cells in various degrees of differentiation. In a histological analysis of pulmonary tumors Klotz found it quite impossible to distinguish the tumor from the bronchial mucosa from the cell having the origin in the alveolar epithelium.

J. J. M. v. M.

Kornblum K. A. C. S. of Primary Carcinoma of the Lung Showing Bronchiectasis and Pleural Effusion. J. R. H. O. Hyd. T. L. and H. L. M. G. W. The Roentgenological and Anatomical Study of Tumors of the Lung. J. K. H. G. I. J.

KORNBLUM reports a case of primary bronchogenic carcinoma of the lung which of peculiar interest because of severe enlargement of the bronchial tree and progressive change in the histological picture. It is a well-known fact that the direct extension of the tumor into the right and left lung is a complication in the development of the tumor. The symptom from the metastases in the brain is so obvious as to overshadow the primary lung symptom.

HYDE and HOLLIES briefly review the literature on primary tumor of the lung and describe the pathological changes in the roentgen picture. They tabulate 14 cases.

Primary tumor of the lung is found often than is indicated by older statistics. Fifty per cent of the cases are of the primary type, various non-malignant tumors representing 10 per cent, metastatic lung tumors developing frequently in males than in females and in the right lung more frequently than in the left lung. They are most common between the fifth and sixteenth years of age. In males the incidence is made before death in only 10 per cent of the cases but recent years have been marked by 50 per cent.

Carcinoma of the lung is a very common disease of the alveolar epithelium. Usually it has its origin in the bronchus. It grows into the bronchial tree and the bronchial tree or tends to encircle the bronchus and it tends into the lung as a tumor mass. Metastasis may occur in either type forming separate nodules

in the lung or elsewhere in the body. Sarcoma generally simulates the second type of carcinoma but originates more commonly along the smaller bronchi of the lung. Carcinoma are generally cystic and have smooth surfaces. They contain fluid and occasionally bone and teeth or even parts of a fetus. Most tumors are circumscribed masses of varying size and location in which cartilage and bone predominate.

The roentgen appearance of the very rare carcinoma of the alveolar epithelium is that of a tumor mass in the parenchyma of the lung. It may be surrounded by an area of pneumonitis or its interior may become necrotic and cavitation may occur. In the case of bronchial epithelial carcinoma of the first type no diagnostic roentgen findings may be present in early cases. When a bronchus is blocked atelectasis occurs and fluid may be found. Extension along the bronchial tree may accentuate the shadows. In the common type of bronchogenic carcinoma there is the shadow of a tumor mass at the lung root. The outline may be smooth but usually is irregular with radiations to the hilum. Bronchiectasis, pneumonitis, fluid or other complications may alter the findings.

Sarcoma simulates the latter type of carcinoma and its development and appearance. The anatomical production of the tumor is oval in shape near the mediastinum sometimes with evidence of contained fluid or bone. The cellular structure is lentiform. Mixed tumors appear as circumscribed lobulated shadows containing areas of the density of bone which differentiate them from echinococcus cysts. They may occur in any location.

In addition to the direct roentgen findings of the tumor and its complications other features of importance may be presented. On the affected side the tracheogram may be high and fixed and the interpleural space narrowed. The mediastinal contents are displaced toward the side of the tumor unless it is very large or there is excessive fluid. The lung usually shows a compensatory emphysema.

The roentgen finding of primary lung tumors is extremely variable and may resemble the following: aneurysm, bronchiectasis, bronchopneumonia, echinococcus cysts, encysted empyema, foreign bodies, gangrene, Hodgkin's disease and other mediastinal masses, interlobar effusion, leukemic infiltration, lobar pneumonia, massive collapse, metastatic malignant disease, pleural plaque, pleurisy with effusion, pneumoconiosis, post-influenzal pneumonia, pulmonary tuberculosis, syphilis, tuberculous abscesses of the spine and tumors of the thyroid, thymus, pleura and other near by structures.

The following conclusions are appraised:
Primary lung tumors are not so rare as is commonly believed.

An attempt at earlier diagnosis should be made.
An understanding of the underlying pathological process is necessary to the interpretation of the roentgen finding.

1 A correlation of the clinical and roentgenologic finding is necessary for the diagnosis

5 Usually the roentgen findings present features which are practically pathognomonic. Among the more suggestive findings is that of a dense hilar mass with nodules and radiations extending into the lung field.

6 The most common or typical lung tumor is a carcinoma of the right bronchial tree in a male in the sixth decade. This appears in the roentgen findings as a hilar shadow with radiations extending into a small immobile lung field but may possibly be obscured by shadows of pneumonic or other complicating processes.

ADOLPH HARTUNG, M.D.

HEART AND PERICARDIUM

Winslow N. and Shipley A. M. Pericardiotomy for Pericardium. A Review of the Literature to May 1927 and a Report of 10 New Cases. *Arch. Surg.* 9, 113.

Winslow and Shipley report 10 cases of pericardium which were treated by pericardiotomy with a cure in 60 per cent and death in 40 per cent. In their first 4 cases approach was made by trephining the sternum but later the approach was through an incision parallel with the left costal margin with resection of the fifth, sixth and seventh costal cartilages. In cases approach was made from the right side and in 1 case by resection of the left fifth costal cartilage.

In every instance the pericardium was thick and taut and the heart seemed close to its anterior wall. The pericardium is easily recognized because it is gray, thick and opaque in contrast to the pleura which is thin and translucent.

The authors review 1018 cases reported in the literature making a total of 118 upon which their statistics are based. The ratio of males to females affected is 3.5 to 1. The condition is most common under the thirtieth year of age. Pneumonia seems to be the most important causative factor but gunshot and stab wounds and osteomyelitis are frequent causes. Only 3 cases have been classified as idiopathic. The chief infecting organisms are the pneumococcus, streptococcus and staphylococcus.

Luncheon has been practiced quite extensively for both diagnosis and treatment but when done for treatment has invariably failed to give lasting results. It has been condemned as being too hazardous and not necessary for diagnosis. When a puncture fails to disclose pus and the clinical signs indicate its presence surgical measures should be initiated promptly. In the cases reviewed the amount of pus varied from a few drops to 500 c. cm. and in the majority had collected behind the heart and pushed it forward against the anterior pericardial wall.

The diagnosis depends largely upon recognition of the diseases in which pericardium is a complication. It is made by a careful physical and

roentgenographic examination of the chest supplemented if necessary by pericentesis of the pericardium. The most common signs are enlargement of the precordial dullness, a rapid pulse, dyspnea, distant and weak heart tones, elevation of the temperature and cyanosis but frequently many of these are missing. Of particular interest clinically is the occasional absence of fever. The bottle-shaped roentgenographic shadow in the center of the chest is of great significance.

The best treatment appears to be open drainage at the earliest possible moment as advocated by Cruton but regardless of the time that has elapsed between the diagnosis and the operation the proportion of cures maintains a fairly uniform level. Klose and Strauss state that it is best to operate before the exudate has changed to pus.

The authors report cases of pericarditis with effusion accompanying osteomyelitis. Examination of the fluid at the time of the operation showed it to be sterile but after a few days it was distinctly purulent. The occurrence of recovery in both instances suggests that it might be well to drain all potentially purulent cases. The authors believe that after the exudate has become distinctly purulent a reasonable delay does not materially compromise the chance of recovery.

Operative intervention has been condemned as unwarranted on the ground that if the patient lives he will sooner or later develop a fatal obliterative pericarditis but 90 of the cases reviewed proved this assumption to be incorrect. From 5 months to 21 years after the operation 5 of the patients were alive and well and at their usual vocations with cardiac boundaries within the normal limits. One patient had adhesive pericarditis but was still alive. Another died from it.

Many different methods have been used for drainage with about the same results but by far the greater number of surgeons prefer tube drainage. Usually 2 tubes are used and placed in the cul-de-sac on either side of the heart. Irrigations with any one of 15 solutions have been employed. The mortality in cases so treated was 48 per cent. In several cases in the reports of which irrigation was not mentioned the mortality was about 40 per cent. Extreme care is necessary in irrigation because of the frequent occurrence of plugging of the catheter with pressure on the heart.

The prognosis of pericardium is always grave but by no means hopeless. The most important factor in the prognosis is the etiology.

CHESTER L. CRUTAN, M.D.

ESOPHAGUS AND MEDIASTINUM

Moore I. The Pathology of Esophagectasis (Dilatation of the Esophagus without Anatomical Stenosis at the Cardiac Orifice). *J. F. & C. Otol.* 9, 7, 11, 57.

Three varieties of dilatation of the esophagus are described—the fusiform, the pear-shaped and the

S shaped In the first the lowest point is the cardia There is no increase in the length of the canal and the greatest dilatation occurs about midway between the level of the cricoid cartilage and the cardia In the pear shaped variety the esophagus is dilated in its lower one third and shows the most marked dilatation just before it passes through the diaphragm as in the funnel type the cardia is the most dependent portion In the S shaped variety which is the chief the upper end is the cricoid and the lower end at the cardia are more or less dilated The anablenls and increase in length It could usually be said the light The dilated portion rests upon the diaphragm From there it passes upward and to the left and then through the diaphragm to a high level

The muscular coat of the pharynx is not always hypertrophied In two of the author's cases the wall was thinner than normal while in the hypertrophy it present even in the most widely dilated portion of the tube The covering of fluid and content at autopsy in many cases seems to indicate that the contraction is due not to spasm but to mechanical constriction surrounding part The author reports cases of this type in which esophagogastricostomy was performed at the cardia of the stomach with good result

Moore agrees fully that the destruction of the nerve end of the vagus plexus by degenerative change may account for the loss of normal muscular contraction and relaxation The result of such lesion could be very active of the criteria filters The cause may be a toxic one

The article contains a historical and photographic of each variety of dilatation

WILSON MD

Wasson W W Thym Stidor J I M I
9 0

Infant with respiratory stridor may be divided into 4 groups

1. Those who at birth make a respiratory noise probably due to mucus

2. Those between a month and a year old with a stridor which is usually attributed to the thymus

3. Those with anomalies and tumors in which there is definite evidence of a pathological condition to account for the stridor

4. Those with definite infection of the upper respiratory passages

Thymic stridor generally suppose to be the result of pressure on the trachea exerted by the thymus on account of its size or perhaps through some internal secretion In the author's opinion the question is whether many of the cases thought to be thymic stridor are due to derangement or enlargement of the thymus

The thymus normally begins to grow at about the birth period and reaches its maximum at about the end of the first year of life After from 8 to 36 months it is usually not detected in the roentgenogram No doubt many factors modify its growth

but as a rule the smaller glands are found in undernourished small children while the larger glands are found in well nourished large children In many cases in which a large thymus has been found at autopsy it has been considered a predominant cause of death no doubt often erroneously

During the past few years the author has had the opportunity to make roentgenological studies of infants from birth and in a considerable number has noted evidence of bronchial or pulmonary infections in the first few weeks of life In such cases the paranasal sinuses are often infected as has been noted by Carmody and Dean

It is quite probable that respiratory infections occur much earlier in life than was formerly believed Wilton has suggested that many cases of stridor in infants are caused by these respiratory infections as young children cannot thoroughly remove mucus from the trachea Many such cases are promptly relieved by the use of atropine

A number of cases are reported in which different forms of treatment were used with about equal results Treatment of the respiratory or paranasal infections gave some relief The cases attributed to the causes did not apparently differ from those of presumably thymic stridor The fact that roentgen ray therapy proved satisfactory in some cases did not warrant the opinion that the thymus gland was the causative factor The author does not assume that the thymus is the principal cause of stridor merely because it is enlarged He searches for other possible causes by a thorough routine examination

While radiation has given good results it is apparently no better than other forms of treatment and is not to be considered a specific

HAROLD M CAMP MD

Remer J and Belden W W Roentgen Diagnosis
and The Apophysis of the Thymus in Children
J A Ig 1917 19

Brief consideration is given to the gross and microscopic anatomy and development of the thymus The pathology of the gland is discussed relative to thymic death thymic asthma and status thymic lymphatic Various clinical types of thymic enlargement are described The outstanding symptom is laryngeal crowing of varying degree accompanied by a peculiar crowing inspiration known as thymic stridor The condition may persist to adult life

Its recognition dependent largely upon roentgen examination This must be carefully made The author describes their technique The shadow of the enlarged thymus as seen on the roentgenogram extends on both sides of the spine It is wider below than above and merges with the shadow of the base of the heart Occasionally the X ray findings are negative when the clinical picture is diagnostic

The results obtained by operation are unsatisfactory Radium has been employed successfully but should be used only by thoroughly competent and experienced operator Roentgen therapy is regarded as the treatment of choice as it is readily

available practical easy to apply and safe in competent hands. The authors give approximately one tenth of an erythema dose of rays equivalent to an 8 in. spark gap filtered through 3 mm. of aluminum. An anterior and posterior area is exposed each time and this treatment is repeated at intervals depending upon the results obtained. The average number of treatments required is four or five.

ADOLPH HARTUNG M.D.

MISCELLANEOUS

Heuer G. J. Further Experiences with Intra Thoracic Tumors. *Ann. Surg.* 1927 LXXXVI 229

Heuer reports upon thirty one cases of thoracic tumor—three tumors of the chest wall six of the pleura nine of the lung two of which were metastatic ten of the mediastinum two hour glass tumors involving both the chest and spinal cord and one apical chest tumor.

Fifteen of the patients were subjected to operation. Two with a benign tumor refused surgical treatment. In the fourteen others the lesion was so far advanced as to preclude operative procedure.

Of the fifteen cases treated surgically radical removal was accomplished in nine. Eight of the patients recovered two of those with malignant tumors are alive more than two years after the operation and two died of recurrence within a year. Of the patients treated by partial removal of the tumor only one lived more than two years.

Of the entire series of cases 35 per cent were operable. The mortality when radical operation was attempted was 10 per cent. The author believes that by earlier diagnosis and operation these results may be materially improved.

FRANK B. BERRY M.D.

Mallet Guy P. and Desjacques R. The Technique of Resection of the First Two Ribs by the Iostero External Suprascapular Route (Technique de la résection des deux premières côtes par la voie postéro-externe sus-scapulaire). *Lyon chir.* 1927 LXXIV 193

In the operation described the incision extends from the acromioclavicular articulation to the center of a line passing from the posterior border of the mastoid to the inner end of the spine of the scapula. It is made between the fibers of the trapezius so that few of the latter are cut and it ends at the tuberosity of the first rib. The spinal nerve is exposed and held aside.

The levator anguli scapulae appears at the posterior angle of the wound. The deep posterior scapular vessels are exposed and ligated and the nerve of the rhomboid which crosses the first rib at a right angle on the scalenus posticus is exposed. The part of the rib lying under the scalenus is then denuded and resected. The resection must be conical in order to avoid the nerves. Resection of the second rib near the transverse process is accomplished easily.

AUDREY G. MORGAN M.D.

SURGERY OF THE ABDOMEN

ABDOMINAL WALL AND PERITONEUM

David V C Peritonitis an Experimental Study
J G G V C Ob 1 9 1 87

David performed experiments on dogs to determine the path of the colon bacillus from the normal peritoneum from the peritoneum which is undergoing different grades of peritonitis and from the peritoneum which contains transudate. A record of the experiments is presented with the following conclusions:

1. Colon bacilli pass directly into the blood stream as well as into the lymphatics from the normal peritoneum.

A well developed plastic peritonitis prevents the passage of the bacillus coli from the peritoneum into the blood stream or into the lymphatics emptying into the thoracic duct.

3. Lesser grades of peritonitis prevent the passage of the bacilli into the blood stream but usually do not prevent its passage into the lymphatics.

4. Colon bacilli injected into the peritoneum which contains a transudate pass rapidly and in great numbers into the chyle from the thoracic duct and directly into the blood stream.

5. By analogy one may assume that a well developed general infectious peritonitis bacteria do not pass directly into the blood stream or into the lymphatics draining into the thoracic duct and that the major problem in peritonitis is not the development of a septicemia.

J I K DIGHTY M D

GASTRO INTESTINAL TRACT

Alvarez W C The Treatment of Nervous Indigestion
J 1 M 1 9 7 1 44

Alvarez uses a more sympathetic attitude to address our patient and emphasize their need for rest. He complains that he is tired and the fact that the clock helps him to sleep they get between 5 and 9 a.m. Rounds at 8 a.m. are very hard on the patient who does not fall asleep until 4 a.m.

Object on is made all to the present tendency to give patients diet with a high content of bran and other roughage and stimulants. The excessive flatulence and indigestion and can be dispensed with during the patient's comparatively short stay in the hospital. Alvarez believes that his somewhat diet is the safest for regular use in hospital.

He maintains also that surgeons would have much better results and that the patient could sleep more better suffer less from nausea and recover more quickly if more use were made of barbituric acid derivatives such as barbital, adalin and bromural.

and less use were made of morphine. The newer soporifics have a more lasting effect and quiet the vomiting center.

Robinson V P A Case of Perforation of a Gastric Ulcer in a Boy of 12
L 1 9 27 600

The patient whose case is reported gave a history of gastric pain for three months and on the attack of severe abdominal pain. At operation a perforation of the stomach 3/4 in across was found in an ulcer 1/2 in in diameter on the anterior wall of the greater curvature. The opening was closed and the ulcer infolded by catgut sutures. The patient was discharged cured two months later.

MARCUS H. HOBART M D

Dansey St J W A Case of Perforation of Gastric and Duodenal Ulcer
M J 1 1 1 S pp 97
P 7

Perforation of chronic gastric ulcers occurs more commonly in males than females possibly because of the anterior position of gastric ulcer in the male. Its incidence is highest between the ages of 25 and 45 years. There is usually a preperforation stage in ulcers. When the ulcer has extended to the peritoneum even a slight increase in the internal pressure is sufficient to bring about its rupture. Rupture may be caused by a meal, hunger, contractions of the stomach or physical exertion (especially when the stomach is full) during sleep perhaps also by the rhythmic muscular contraction of the stomach.

Practically 90 per cent of perforated ulcers occur in the immediate area of the pylorus either on the gastric or the duodenal side of the sphincter.

In all cases there is a history of attacks of indigestion. The first symptom of rupture is a constant stabbing pain in the upper abdomen. This is followed by rigidity of the upper abdominal muscles. Vomiting is not common before the development of peritonitis. The breathing is shallow and short and the facial expression is drawn and anxious. The pulse at first slow but with the onset of peritonitis it becomes faster and the abdomen becomes distended. The gastric contents in case of ulcer are highly acid and tenacious. When the diagnosis is made promptly and operation is done within a few hours the mortality rate is greatly diminished.

The author describes the usual procedure of suturing the omentum over the site of rupture and the establishment of drainage.

The advisability of performing a gastric jejunostomy at the time of operation is open to discussion. The author is in favor of this procedure unless the patient's condition is very poor. He gives the following reasons:

1. As a rule it does not increase the risk.

2 Gastrojejunostomy must be accepted as an essential step in bringing about the cure of the ulcer

3 There is much less chance of leakage after this operation

4 A gastrojejunostomy prevents the possibility of obstruction when a pyloric or duodenal ulcer has been so infolded as to occlude the lumen

HERMAN H HUBER M D

Abadie J Three Hundred Operations for Ulcer of the Stomach 264 of Which Were Pylorotomies
(A propos de 300 opérations pour l'ulcère de l'estomac dont 264 pylorotomie) *Bull. Chir. 1924*, 111, 614

The cases reviewed included ulcers of the last three fourths of the stomach and the first parts of the duodenum. The treatment of ulcers high up on the lesser curvature near the cardia and of ulcers in the third portion of the duodenum is quite different. Ulcers should be classified chiefly into those near the pylorus and those far from the pylorus rather than into those of the stomach and those of duodenum. Among the author's 64 cases of duodenopylorotomy there were 14 deaths, some of which were due to errors of technique and others to pulmonary complications which might perhaps have been prevented.

Simple resection of an ulcer is never satisfactory, as the removal of a lesion does not cure the disease. Excision of the pylorus is not justified because it is a difficult and as serious as pylorotomy and does not decrease but rather increases gastric hypersecretion and hyperacidity. Gastroenterostomy is better because it puts the ulcer at rest, changes the dynamics and chemistry of the stomach, results in a permanent cure and is less serious than gastropylorotomy. The author uses it in about 1 in 10 cases. As a rule he prefers duodenogastrectomy. This operation removes the lesions, prevents their possible transformation into cancer and profoundly changes the mechanical and chemical conditions of gastric function because it removes the pylorus thereby changing the nervous connections and removes also the greater part of the secretory area.

The author has seen a number of cases in which there was no macroscopic ulcer but the pylorus appeared to be thickened. In such cases in which he removed the pylorus a cure resulted. In other cases he performed a gastroenterostomy at first but was obliged to perform a pylorotomy later. When the risks of pylorotomy seem out of proportion to its advantages over gastroenterostomy, he performs the latter operation.

Abadie emphasizes the necessity of delaying operation until the blood urea is reduced to approximately normal and the importance of prophylactic vaccination against postoperative pneumonia. He uses spinal anesthesia induced with stavaine and preceded by an injection of caffeine. He never uses morphine or scopolamine. He has been obliged to employ ether in the last only cases.

ALFRED G MORGAN M D

Odelberg A Primary Resection of the Stomach in Perforating Gastric and Duodenal Ulcers
Acta Chirurg. Scand. 1917, 131, 159

The author reviews 6 cases of primary resection for perforating gastric or duodenal ulcer. He draws the conclusion that methods of resection may be used even in early cases of perforation.

Ieresson M Final Results of Gastric Resections for Cancer
Acta Chirurg. Scand. 1919, 131, 1

In this article the surgical treatment of carcinoma of the stomach is reviewed on the basis of 1150 cases. In 330 cases in which only exploration was done the operative mortality was 17.1 per cent. In 450 cases treated by gastroenterostomy as a palliative measure it was 3.1 per cent. In 361 cases a radical resection of the stomach was performed.

The author has made a special study of cases of radical gastric resection and has succeeded in tracing the majority of them. He points out that during the last 10 years the operative mortality of gastric resections has risen considerably, but this is due to the more radical measures employed today and to the fact that many cases previously considered inoperable are now operated upon.

Of the 361 patients subjected to resection 10 were men. The types of operations were the Billroth I, Billroth II and the Polya. The total mortality was 8 per cent. The Billroth I and Polya operations have a higher mortality than the Billroth II procedure. Eighty and five tenths per cent of the patients died of recurrence of the carcinoma within 5 years. Eighteen patients were alive and well from 7 to 20 years after the operation.

In several of the cases in which good results were obtained the growth was large. In 3 cases a resection of the transverse colon was necessary. In none of the cases with successful results was there involvement of the regional lymphatic glands.

The Billroth II and Polya operations proved to be far superior to the Billroth I procedure.

In the author's experience the scirrhus type of carcinoma has shown a much greater tendency to recur than any other. HAROLD W WOOLLEY M B

Devine H B The Status of Gastro Enterostomy in Gastric Surgery
Med. J. Australia Supp. 9, p. 67

Devine reviews the opinions of English, Continental and American surgeons regarding the status of gastroenterostomy.

The fundamental physiological aim in gastroenterostomy is to obtain an ideal emptying time. The emptying time depends upon what Alvarez calls the gradient of the stomach and intestine and on the distance of the stoma from the pylorus. The farther away the stoma is from the pylorus the quicker the emptying time. In the author's cases of gastroenterostomy a skiagram is taken after the operation to determine the exact emptying time and a fractional test meal is carried out to find the acidity as a guide for postoperative treatment.

Case of unsuccessful gastroenterotomy fall into two groups: (1) those with ulcer formation and (2) those with errors in the gastric motility manifested by nausea, sickness, vomiting, diarrhea, and other digestive movements and great loss of weight and energy and excessive spur formation at the anastomosis.

The cause especially of the error in gastric motility may be explained as follows:

1. The afferent loop is too long and a tension in the application of the intestine to the stomach was not noticed.

2. The loop is too short and slight tension has no room to untwist.

3. The loop is kinked near the anastomosis.

4. The stomach pulls in the retentive deep peritoneal cavity too near the pylorus.

5. In the very dilated stomach, pyloric stenosis, the stomach is run up to the ileocecal junction and the serous curve by the peritoneal contraction and traction of the dilated gastric muscle.

6. The stomach puckered by binding it into the rent in the transverse colon on the intestine side of the anastomosis.

7. The gastric and intestinal ucle lack a normal gradient.

8. The stomach too close to its direct surroundings or it is near the lesser curvature.

Spur formation, cur most frequently in the very large stomach placed too high on the posterior wall or too far toward the fundus.

Ciminatti A. The Effect of Bilroth II Resection of the Stomach on the Function of the Pancreas and on Intestinal Absorption. (A study of the effect of the Billroth II resection on the function of the pancreas and on intestinal absorption.) The author has studied the external secretion of the pancreas in dogs with pancreatic fistula after exclusion of the pylorus by the Eiselberg's or Pavlov's method. Ciminatti made two series of experiments, in one of which he studied the intestinal absorption of fats and nitrogenous substances after resection of the pyloric part of the stomach by the Billroth II method and in the other of which he studied the external secretion of the pancreas in dogs with permanent pancreatic fistula after resection by the same method. His object in both series was to study the external secretion of the pancreas after deviation of the chyme from the duodenum. He still claims priority for his method as it was different from that of Fedeli. He is glad to note that the results by the two methods are the same.

AUDREY G. MORGAN, M.D.

Fistulae of the Small and Large Intestine. 1. S. S. 92. 1. 1. 4. 6. 464.

It limits the discussion to fistulae above the level of the rectum. He classifies such intestinal fistulae as: (1) fistula opening externally on the abdominal wall; (2) opening between the lumen of hollow viscus; and (3) fistulae formed by the rupturing of an abscess into a hollow viscus.

Fistulae in the first group may cause characteristic symptoms or may be found only on exploration. In biliary obstruction a natural cholecystenterostomy may occur. Fistulae opening externally discharge the contents of that portion of the intestine in which the inner orifice is situated. The amount of the discharge depends upon the length of the tract, its tortuosity, and the size of its inner orifice. A case is cited in which the discharge was intermittent because of a valve-like inner orifice.

The character of most intestinal fistulae can be determined with the X-ray after the administration of a barium meal or enema. In the small intestine the location of a fistula can be estimated roughly from the length of time elapsing between the oral administration of an aniline dye and the appearance of the dye in the discharge.

Intestinal fistulae formed surgically for the relief of obstruction or intestinal paresis usually close spontaneously but occasionally they persist and if the opening is in the upper part of the intestine and if it discharges the major portion of the intestinal contents, its closure may be both serious and difficult.

The treatment of testal fistulae is conservative or radical. By more prompt operation for strangulation and abscess, care in surgical technique and handling of the tissues and prevention of contact between a drain and a visceral line of suture, the formation of intestinal fistula may often be prevented.

Conservative treatment should always be tried except in cases of debilitating duodenal fistula. The irritating effect of the discharge on the skin may sometimes be controlled by the application of suitable emollient and frequent changes of the dressing. An effort should be made to decrease the discharge by the pre-use of graduated tampons.

In the appendectomy, fecal fistulae are much less frequent than the stump of the ligated appendix buried by a purse-string suture of absorbable material. When this is impossible because of friability of the cecal wall, the omentum should be sutured over the doubtful area. In the destruction of the intestinal wall contiguous to an abscess, the intestine should be resected and an anastomosis effected if the patient's condition will permit.

For fistulae of the sigmoid colon, which are often due to a ruptured diverticulum or pelvic abscess, conservative treatment is best.

In the treatment of fistulae of the upper intestine, radical measures are usually necessary. As advocated by Koehler, attempt should be made to reestablish the normal passage of the intestinal current by the introduction of the horizontal portion

of a rubber T tube. After the size of the fistulous orifice has been materially reduced by granulations the vertical and outer horizontal segments of the tube should be severed and the remaining horizontal segment left to be discharged through the rectum.

Radical treatment is indicated when conservative treatment fails. Either the simple extraperitoneal suture of the orifice of the fistula or the more formidable suture or resection may be attempted.

In the treatment of complete fistulae of the lower part of the small intestine in which the distal segment of the intestine is retracted into the peritoneal cavity, lies at some distance from the anterior abdominal wall the author follows the mesentery of the proximal loop to its vertebral attachment and then tracing it downward and to the right dissects close to the mesenteric layer until the orifice of the distal loop comes into view. He then makes an end to end anastomosis.

He reports the case of a woman on whom a myomectomy was done eleven years ago. In 1914 the patient had attacks of low abdominal and rectal pain, fever and diarrhea. At operation an extensive abscess was found. Thereafter a sinus persisted in the abdominal scar. In 1925 the sinus was found to communicate with the small intestine but its discharge has gradually decreased and the abdominal scar has become progressively more depressed so that healing will probably result.

In the discussion of this report MORRIS stated that if the inner opening of the fistulous tract is far enough away from the abdominal wall plastic excision will usually close the tract spontaneously. In many cases of fistula the injection of Beck's bismuth paste gives good results. In a case of fistula due to a large ovarian abscess one injection was followed by cure.

HYND classified intestinal fistulae into four groups: (1) those occurring from the perforation of a marginal ulcer into the colon; (2) those occurring between pelvic abscesses, the tubes and the sigmoid; (3) those occurring between the gall bladder and duodenum; and (4) those occurring after gangrenous perforative appendicitis. He reviewed the surgery that is necessary to cure a gastrojejunocolic fistula and cited a case in which a no loop gastroenterostomy had been done previously. He stated that fistulae in the duodenum heal well and are of less importance than those occurring from the opening of a jejunal stump following resection. Since all intestinal fistulae are different he believes that each must be considered separately.

DUNHAM reported a case in which he injected iodoform and ether into an abdominal sinus which exuded pus but no gas or feces. Soon thereafter the odor of ether was detected on the patient's breath, this indicating a connection between the sinus and the intestine. The sinus closed without further treatment.

BRICKNER suggested that in his case the intestine may have been invaded by an endometrioma or the sinus may have had two communications, one

with the intestine and the other with the uterus or a tube.

DOUGLASS discussed two cases showing the difficulty encountered in determining the etiology of fistulae. One was the case of a man with several fistulae following operation for double hernia. At a second operation a strangulated femoral hernia was found and a cure was effected by a temporary cecostomy and intestinal resection. The other case was that of a man upon whom an ileosigmoidostomy had been followed by a fecal fistula. On the supposition that the anastomosis had given way a second operation was performed. On dissection of the fistula a small hole in a loop of the small intestine was found.

EDMAN reported a case of combined external fistula similar to the case reported by Eliot.

SETTLER called attention to the fact that cigarette drains may cause fecal fistula. He believes however that abdominal drains should be left in place for at least a week in order to establish a definite sinus tract.

AUCHINCLOSS stated that in the treatment of intestinal fistulae he has used a sea sponge with a hole in the center for a suction tube. The sponge takes up the excess fluid as it gushes out. He has found also that drying the wound with an electric light lamp is of great aid. He warned of the occurrence of fecal fistulae from the division of intestinal adhesions.

BANCROFT said that one of the ways of preventing fistulae is drainage of secondary pelvic abscesses following appendicitis through either the cul de sac or the rectum.

In closing the discussion ELIOT reported that he had never used Beck's paste or opened pelvic abscesses through the rectum. He cited statistics showing that duodenal fistulae usually heal spontaneously. He believes that abdominal drainage is best established by means of a flexible rubber tube with a strip of gauze running through it. The tube should be removed at the end of the second day and there after changed daily. At the end of a week its use may frequently be suspended. The period of drainage should be as short as possible.

KARL H. TANNENBAUM, M.D.

Mucclair Spinal Anesthesia in Intestinal Occlusion (A propos de la rachianesthésie dans l'occlusion intestinale). *Bull et mém Soc nat de chir* 97 lui 472.

Lapointe A. Spinal Anesthesia in Acute Ileus (La rachianesthésie dans l'ileus aigu). *Bull et mém Soc nat de chir* 1927 lui 474.

Vandelande Boppe and Okunczyk Spinal Anesthesia and Ileus (Pachiansthesie et ileus). *Bull et mém Soc nat de chir* 107 lui 479.

Picot Spinal Anesthesia in Intestinal Occlusion (La rachianesthésie en cours de l'occlusion intestinale). *Bull et mém Soc nat de chir* 111 lui 486.

MUCCLAIR reports cases in which intestinal occlusion was overcome by spinal anesthesia. One of them was a case of strangulated hernia and the

ALARY said that he does not use spinal anesthesia in cases of occlusion as he knows of death on the operating table resulting from the hypotension. ALDERY C MORGAN MD

Duval P. Spinal Anesthesia in Acute Ileus (La rachianesthésie dans l'iléu aigu) *Bull. Chir. 1911* 590

Duval has collected 400 cases of spinal anesthesia in acute ileus. He groups them into cases of strangulated hernia, dynamic ileus, and mechanical ileus with various subgroups under the latter heading. He finds that spinal anesthesia brought about evacuation of the intestine in 68 per cent of the cases of dynamic paralytic and paralytic ileus and in only 16 per cent of those of mechanical ileus.

In acute ileus its effect varies greatly in different cases. It does not seem to be dangerous unless the patient is weak and intoxicated and has a low blood pressure.

In strangulated hernia local anesthesia should be used as it is more active in causing spontaneous reduction of such hernia than any other form of anesthesia.

In postoperative ileus spinal anesthesia seems to be the treatment of choice if peritonitis is not evident. The only question is whether a secondary operation is necessary after the evacuation of the intestine. The author believes that spinal anesthesia often brings about a permanent cure without any further intervention and that these are the only cases in which it should be used as treatment. However, the patient should be kept under close observation and a secondary operation should be performed if the symptoms of ileus recur.

In cases of mechanical ileus the intestinal evacuation should be followed by operation. Whether the operation should be performed immediately or after several hours of rest will depend upon the conditions of the particular case.

When spinal anesthesia causes intestinal evacuation it facilitates the examination of the abdomen and renders the operation less serious. Even when it does not cause evacuation until after the removal of the obstruction it obviates the necessity for handling the distended loops to put them back into the abdomen, makes the closure of the abdomen easier, and favors rapid reintoxication of the organism, which in Duval's opinion far outweighs the danger of intoxication from the absorption of toxic material that has been emphasized by Okinczew. Duval concludes that spinal anesthesia is the anesthesia of choice in acute ileus except in the cases of patients with severe intoxication or low blood pressure. ALDERY C MORGAN MD

Guibal P. Spinal Anesthesia in Ileus (La rachianesthésie dans l'iléu) *Bull. Chir. 1911* 590

The author has used spinal anesthesia in 46 cases of intestinal occlusion. It brought about

evacuation of the intestine in only 4. In one it caused very serious symptoms and in other death. In 3 of the 4 cases in which intestinal evacuation resulted it did not occur until after removal of the mechanical obstacle and would probably have occurred in a few hours without the spinal anesthesia. The patients who died were well and vigorous and if any other than spinal anesthesia had been used would probably have recovered.

From his experience in about 3,000 cases Guibal concludes that spinal anesthesia does not cause evacuation of the intestine in more than about 1 case in 10. He believes it to be particularly dangerous in ileus because this condition is generally accompanied by intoxication, stercoraria, and shock.

ALDERY C MORGAN MD

Larimore J W and Graham E A. Diverticula and Duplication of the Duodenum with Reference to the Importance of Cholecystitis in the Production of Symptoms. *Am. J. Surg.* 1911 10 3

A large majority of duodenal diverticula are clinically latent. In addition to diverticula of the true and false type there are pseudo-diverticula. Pseudo-diverticula are redundant duplications of the duodenum within its retroperitoneal sheath.

The various findings in the various types of duodenal diverticula are described. Differentiation of the true and false type cannot be made prior to operation or autopsy. Cases of large false diverticula and cases of pseudo-diverticula are reported. In the latter the gall bladder was displaced and its removal relieved all of the symptoms although the diverticular side pockets of the duodenum persisted. Cholecystography is considered a necessary procedure in such cases.

J FRANK DUGLEY MD

Brenner E C. Perforated Ulcers of the Duodenum. *Ann. Surg.* 1911 53 393

Brenner reviews twenty even cases of perforated ulcer of the duodenum. He states that shock is not so prominent or so frequent a complication of perforation as is generally believed. It occurred in even of his cases. He noticed that ulcers about to perforate caused tenderness and rigidity of the abdominal wall on pressure. He believes that operation should be performed immediately regardless of the occurrence of shock. The lumen of the duodenum may be reduced as much as half by infolding of the ulcer without danger of causing stenosis. In the author's cases complete closure of the ulcer gave the best results. D F ROBERTSON MD

Potoschning G. Perforated Duodenal Ulcer in a Child 11 Years of Age. Gastroduodenal Resection Recovery (Ulceri duodenali perforata in bambino di 11 anni resectione gastr-duodenali curazione). *Arch. Ital. Chir.* 1911 11 105

A child 11 years of age was suddenly taken with intense abdominal pain in the early morning and

brought to the hospital a journey of 3 hours on the back of a mule. The mother said that the patient had had gastric symptoms and transitory pain in the epigastrium for several months and before the last attack had vomited twice. For the past few days the pain had been more intense and had lasted for several hours. On the way to the hospital the child had vomited twice.

A diagnosis of perforated duodenal ulcer was made from the rapid development of the signs of diffuse peritonitis and from the discovery on roentgen examination of a zone of air between the liver and the diaphragm. Castroroduodenal resection by the Billroth II method was followed by recovery.

Ulcer of the stomach and duodenum is rare in childhood and perforation is still more unusual. The author believes that his patient is the youngest patient in whom a perforated ulcer has been treated by gastroduodenal resection. Most of the cases have been treated by simple suture of the ulcer. The author believed that resection was indicated in his case because the lesion was a chronic callous ulcer, the condition of the heart was good and the peritonitis was still limited to the subhepatic space.

ALFREY C. MORGAN, M.D.

Sherwood W. A. Neoplasms of the Ileocecal Valve S. G. C. I. V. 4. 9.

New growths of the gastroenteric tract are found most commonly at the points of greatest constriction, where the alimentary tube changes in structure and function and where there is a valve or valve-like arrangement for the propulsion of the food current from one part to another. These points of greatest constriction are the esophageal orifice of the stomach, the pyloric ring, the ileocecal angle, the rectosigmoid juncture, and the anorectal pouch.

The author reports three cases in which the neoplasm originated in the septum dividing the cæcum from the ileum and caused an intussusception. Histological examination of each tumor showed three types of pathological change—carcinoma, fibroma, and lymphosarcoma.

M. F. L. R. H. N. M. D.

M. I. W. E. Gabriel, W. B. Gordon, W. S. S. Discussion on Colostomy. P. R. S. M. D. L. d. 9. 45.

MILES. As a result of the advances that have been made in surgery, the lumbar colostomy of pre-antiseptic days has been superseded by the more logical and mechanically improved sigmoidostomy.

At first the sigmoidostomy was made in the middle of the pelvic loop with a large opening in the parietes, but the spur receded so that the opening became a lateral one with all the defects of the lumbar colostomy. Later Cripps pointed out that the difficulties could be obviated by making the opening high up in the pelvic colon.

The essential requirement of a colostomy is prevention of the passage of bowel contents beyond the

stoma into the distal loop. To meet this requirement a permanent spur is essential. When the mesocolon is short, difficulties occur in maintaining the spur as soon as the supporting rod are removed, tension from within causes the spur to recede. It was formerly thought by some surgeons that the recession could be prevented by dividing the bowel completely to interrupt peristalsis. Division of the bowel is objectionable, however, as it creates a weak spot between the opening which favors herniation.

GABRIEL. Colostomy is often done with increasing frequency and is superseding operations performed chiefly for the purpose of avoiding it. It has come to be an essential part of any radical operation for carcinoma of the rectum and if well executed will give comparative comfort and will prevent the patient from carrying on his normal occupation.

Common indications for colostomy in inoperable carcinoma of the rectum are impending obstruction, pain, loss of control from involvement of the sphincters, profuse discharge, and hemorrhage, multiple pelvic fistulae, rectovaginal fistulae, cellulitis of the buttock, and a mass of growth outside the anus.

Colostomy is indicated also in fibrous stricture of the rectum and for diverticulitis with abscess formation, peritonitis, or vesicovaginal fistula.

A rare indication for the operation is acute spreading ulceration about the rectum and anus.

Recent injuries of the rectum, especially those associated with fractures of the sacrum and pelvis, colostomy is a useful adjunct to local drainage. It is of value also for the relief of obstruction due to compression by extrarectal tumors.

The best incision is a vertical one 1/2 in. to the left of the midline, splitting the fibers of the rectus muscle and large enough for exploration should exploration be required. Such an incision is less liable than others to be followed by a ventral hernia and through it the transverse colon can be reached. It is superior to any incision through the oblique muscles.

Fixation of the bowel is best accomplished by means of a glass rod pushed through the mesocolon to 1 in. from the edge of the bowel. This rod should be left in place for 14 days in order to prevent any subsequent retraction of the bowel. The peritoneum with the posterior fascia and the rectus sheath should be approximated to the bowel wall in layers with interrupted sutures of catgut. The skin should be closed when necessary by interrupted silk-worm gut sutures. Accurate closure is necessary to increase the strength of the abdominal wall.

The most common difficulty is due to shortness of the pelvic mesocolon. Liberation of the bowel may be facilitated by division of adhesions. If a pelvic colostomy seems impossible, the incision may be extended upward and the transverse colon brought out.

The immediate complications of colostomy include heart failure, pulmonary complications, ex-

haustion peritonitis prolapse of the small bowel intestinal obstruction coma renal failure and hemorrhage

Among the remote complications are scar contraction with stenosis retraction of the spur prolapse ventral hernia and extension of the carcinoma to the site of the colostomy

Opening of the colostomy should not be done until 48 hours after the operation unless there is extreme distention. The later the colostomy is opened the better the chances for healing of the incision. A Paquelin cautery should be used in the transverse axis of the bowel.

At least $\frac{1}{2}$ in. of bowel should be left outside the abdomen. The excess may be trimmed off with scissors. A blanket stitch of catgut is advisable around each orifice.

A washout with soapsuds with the patient on his left side should be a daily routine procedure. The distal loop also may be lavaged on alternate days.

In St. Mark's Hospital, London, a thin piece of cotton wool about 5 in. square is placed next to the skin and covered by a flat piece of celluloid with 4 studs facing outward to impinge on the returning belt. Colostomy cups are not advisable.

Foods with a laxative effect should be avoided.
GORDON WATSON. Certain details of the operation of colostomy should be stressed. In order to avoid the danger of hernia the incision if made large enough for exploration should be reduced so that there is just room for the bowel and glass rod. It should be borne in mind however that if the opening is too small obstruction may occur. Sepsis may be prevented by suturing the posterior and anterior layers of the rectus sheath together and the raised peritoneum to the bowel. The epigastric vessels should be avoided.

A very important detail is the prevention of tension on the bowel which may cause hemorrhage or interfere with the blood supply.

A daily washout is necessary. After a washout the patient can often go until the next day without being soiled. Colostomy cups are to be avoided as they are often offensive and are apt to cause congestion and prolapse.

ROWLANDS. Colostomy is a valuable operation. It prevents suffering and saves or prolongs life. It is particularly valuable in carcinoma of the rectum or sigmoid and is more effective than excostomy in relieving obstructions low down in the colon or rectum. It is undesirable however when resection or short circuiting can be carried out without undue risk.

A small partial opening is essential. The most satisfactory location is the high left inguinal or iliac region. The bowel is held in place by a glass rod or rubber covered artery forceps but may be anchored secondarily by means of skin sutures at the upper and lower angles of the wound.

If the bowel must be opened immediately a rubber tube will serve a longer time without leakage than a glass tube. In all cases the colon must be free and without tension.

NOBURY. A subumbilical colostomy through the left rectus is better controlled by the patient than an inguinal colostomy.

Complications of importance are (1) retrograde intussusception of the lower end of the colostomy with gangrene of this portion of the bowel (2) contraction of the opening with obstruction (3) rupture of a diverticulum during acute obstruction and (4) prolapse of the bowel at the colostomy opening.

EDWARDS. When performing a colostomy it is the aim of the surgeon to prevent the passage of bowel contents from the proximal to the distal portion of the colon and at the same time to prevent prolapse of the small intestine through the wound. Both of these aims are best accomplished by forming an effective spur by inserting a deeply buried silkworm gut suture which bisects the wound. Such a deep suture should never be omitted.

To control a hypogastric location through the left rectus muscle is best. Cups, bags or bottles in the after treatment are contra indicated.

LOCKHART MUMMEY. The high left rectus incision is the most satisfactory for cleanliness and control. A daily washout is necessary in most cases. When the patient is abnormally fat it is best to cut away a large area of fat and allow the skin to come down to the aponeurosis rather than to attempt to bring the gut to the surface under considerable tension.

MURPHY. The left rectus colostomy has certain drawbacks: (1) hemorrhage from the deep epigastric vessels (2) ventral hernia and (3) the proximity of the umbilicus which necessitates special attention for cleanliness.

Absolute control of a colostomy by the patient is practically impossible but may be aided by a daily washout and the avoidance of laxative foods and drinks.

When there is any doubt that a colostomy will be beneficial it should not be performed.

LITZVILLIAMS. There is not much difference in the end results dependent upon the location of the colostomy. Theoretically however better results should be obtained from a gridiron incision high up on the lateral abdominal wall.

Exploration either through the colostomy incision or through a primary incision is always indicated. In cases of carcinoma of the rectum the discovery of a secondary nodule in the liver should contra indicate any further procedure except measures for the relief of obstruction. If technical care is taken a large incision should not produce complications.

MARSHALL DAVISON, M.D.

Brindley, G. V. The Symptomatology and Diagnosis of Cancer of the Large Bowel. *Texas State J. Med.* 1917, VIII, 3-5.

The chief function of the right bowel which develops from the midgut is the absorption of fluids. In this part of the colon the cellular or ulcerating type of carcinoma predominates. The function of the rest of the large intestine is the retention of the intestinal contents until its excretion and in this

The treatment in four cases of adenocarcinoma of the rectum is described in detail and the original lesions the technique of the treatment and the end result are shown in illustrations. The cases are typical of the early operable group. In all the results were excellent. Although metastasis to the inguinal nodes developed early in one case satisfactory palliation was obtained. In cases of bulky lesions radium was applied after treatment with the electrotherm. Radium was applied all cases by means of a one tube silver applicator (0.5 mm thick) containing the element with identical filtration of 10 mm of brass and 0 mm oflara rubber. The treatment was instituted with the patient in the knee chest position and with the use of a well lighted proctoscope. The radium was applied in rubber applicator directly against the growth. The normal rectal wall being protected with vaseline gauze packing. There was a mortality of three or four days between the operations.

Colostomy is a valuable adjunct to place the field of operation and to decrease the risk of secondary infection. However the slight risk in the procedure itself and the subsequent restoration. Moreover the patient usually dread the operation and experience has shown that effective treatment can be given without colostomy.

Pfeiffer D B The Principles Underlying the Surgery of Carcinoma of the Rectum
Surg 971 34

The author reviews the evolution of various operations devised for the treatment of carcinoma of the rectum. He states that German surgeons still favor the various types of perineal operations whereas French surgeons advocate the combined abdominoperineal procedures. In England and America there are advocates of both methods. Within recent years Coffey Jones Lockhart Mummery and Miles have developed their techniques to a high degree of proficiency. It has been the experience of all surgeons that carcinoma of the rectum is more amenable to surgical treatment than any other form of gastro intestinal cancer.

Hoehenegg has reported upon a series of 500 cases 800 of which were treated surgically. Four hundred and sixty one of the operations were radical sacral procedures. Of these 34 were one stage amputations with a sacral colostomy and 05 were resections with reestablishment of continuity of the intestinal tract. In the case in which sacral amputation as done death resulted in 41 per cent and a 3 year cure was obtained in 43 per cent. In the 205 cases treated by resection death occurred in 87.8 per cent and a 3 year cure was obtained in 23.4 per cent.

Eichhoff of the Breslau Clinic reported upon 101 cases in 36 of which a radical operation as done with an operative mortality of 24 per cent and a 3 year cure in 26.7 per cent.

Gabriel in a review of Lockhart Mummery's work reported upon 143 cases of rectal carcinoma in

which death resulted in 15.4 per cent a 3 year cure was obtained in 23.5 per cent and a 5 year cure was obtained in 24 per cent. Lockhart Mummery makes a permanent iliac colostomy with perineal excision of the rectum.

Miles of London and Blake Lusk Jones and Coffey in America favor the abdominoperineal method. Some of these surgeons have already reported a small series of cases treated by their more recent technique which show a decrease in the mortality. The end results however are not yet known definitely.

The author calls attention to the difficulties of attempting to preserve the sphincters and the invisibility of a permanent sacral colostomy. He describes in some detail the arrangement of the arteries of the sigmoid and rectum and emphasizes the necessity for care in the choice of the site of ligature.

Pfeiffer shares with many surgeons the belief that the result of operation for cancer of the colon will become more favorable. H. R. W. WOOLKEY M.B.

LIVER GALL BLADDER PANCREAS AND SPLEEN

Hughson W. Portal Cirrhosis and Its Surgical Treatment. A Review of 26 Cases.
Surg 971 34

Hughson reviews our present knowledge of portal cirrhosis and emphasizes the extreme difficulty of diagnosis. The conclusion. Of a large series of apparently suitable cases he made a study of 26. He points out that the results of surgical treatment reported in the literature are difficult to analyze and suggest that cure and marked improvement may often have occurred in cases which could not strictly conform to modern ideas of portal cirrhosis.

He reviews the various therapeutic measures for the treatment of ascites in portal cirrhosis and from the study of his 6 selected cases come to the following conclusions:

1. It is extremely difficult to make an accurate diagnosis in this disease.

2. Age sex race and time offer no special indication for the employment of surgical measures.

3. There is no reason to believe that surgical measures adopted for the purpose of establishing colateral circulation are of benefit.

Hughson points out the almost constant occurrence of thickened peritoneum in true cases of portal cirrhosis and suggests that many of the reported cures following paracentesis or some other surgical procedure may have been due to obliteration of the peritoneal cavity by adhesions.

H. R. W. WOOLKEY M.B.

Hanrik R A The Emptying of the Gall Bladder. An Experimental Study.
Surg 971 34

The experiments reviewed in this article were made in a study of the normal emptying of the gall

bladder as shown by the roentgen ray during digestion. Many investigators are of the opinion that the gall bladder empties its bile through the common duct into the duodenum. Others because of a lack of undoubted experimental proof to the contrary believe that the bile does not leave the gall bladder by the channels through which it enters.

The author's experiments were performed on dogs. The gall bladder was injected with 40 per cent iodized oil which is non irritating and produces dense shadows in the roentgenogram. To cause emptying of the gall bladder during digestion Boyden's methods of feeding were used.

For twenty four hours previous to the injection the animals were fasted. At the end of that time the abdomen was opened under ether anesthesia and with a strictly aseptic technique the gall bladder and surrounding lobes of the liver were delivered into the wound. The 40 per cent iodized oil was then injected into the gall bladder after the withdrawal of an equal amount of bile. In all but one case the needle was inserted through one edge of the liver and introduced into the gall bladder only where the latter is attached to the liver by the *hepaticus*. By this procedure it was possible to prevent disturbance of the musculature of the gall bladder and to control the leakage of bile. The slight oozing if any from the liver was soon stopped by holding the gloved finger over the area. This technique renders suturing and clamping of the gall bladder wall unnecessary and is apparently ideal for studies of gall bladder function.

After the operation the animals were again fasted until observations were made. All factors were kept as constant as possible. Roentgenograms of the gall bladder were made daily during the fasting period.

It was found that the gall bladder emptied a portion of its contents into the duodenum with digestion. The contents passed to the duodenum through the cystic and common ducts. The emptying with digestion was intermittent. Periods of active emptying were usually short and could be definitely limited over a varying length of time. Emptying began within from ten to forty five minutes after feeding and ceased entirely at varying intervals.

These studies indicate that contractions of the musculature of the gall bladder are the main factors in normal emptying and that intrinsic periodic contractions are important features brought into play with digestion. There was ample evidence that the gall bladder does not tend to expel its contents during the fasting state. Respiratory movements and changes in external and intra abdominal pressure have only a minor part if any in normal emptying but in several instances mechanical influences such as the passing of a stomach tube filling of the stomach with air aspiration of the stomach and manipulation of the stomach tube in the stomach caused the definite passage of material from the gall bladder.

The sphincter at the lower end of the common duct may be a factor concerned in the regulation of the flow of bile from the gall bladder but its action is not necessary for the emptying with digestion. External abdominal pressure caused some expulsion of the gall bladder contents in one instance when the sphincter at the lower end of the common duct was eliminated but feeding was necessary to cause marked emptying of the vesicle.

Kirklin B. R. and Kendall E. C. A New Iodine Compound for Cholecystography. *Radiology* 19 5 55

The oral administration of the iodine and bromine salts commonly used for cholecystography is occasionally followed by nausea vomiting or purging. In some instances pills and capsules fail to dissolve. Accordingly Kirklin and Kendall set about to prepare a compound which would be free from disagreeable effects and could be given in liquid form. By synthesis the diiodo diethyl ether of di salicylphthalein was obtained. This drug is a white crystalline powder. A 10 per cent aqueous solution the form in which it is given is clear colorless odorless and slightly bitter sweet in taste with a transitory warmth as of peppermint.

After experiments on dogs the drug was given to 35 patients most of whom had been examined previously with the usual bromine salt and had responded normally to the test. The shadow of the gall bladder obtained with the new drug was denser than that obtained with the bromine salt and no shadow of the compound was seen in the bowel. None of the patients vomited though several had vomited after taking the bromine salt. 2 were purged unpleasantly but 1 of these had recently suffered from diarrhea.

Further experience will be necessary to determine the value of the compound.

Boyd W. Some Points in the Pathology of the Gall Bladder. *Canadian M J* 1927 xvi 5

The author has studied the structural changes occurring in the normal and pathological gall bladder. In the morbid anatomy of gall bladder inflammation three principal conditions are recognized.

First acute cholecystitis characterized by infiltration of the entire wall by acute inflammatory cells and the outpouring of a purulent exudate into the cavity of the viscus. Second chronic cholecystitis in which the wall is again infiltrated by inflammatory cells this time of a chronic character with fibroblastic proliferation subsequent fibrosis and serious interference with the delicate absorbing mechanism of the organ. Third a condition that may be termed the lipid gall bladder also dependent in part upon chronic inflammation although of a slighter nature and distinguished by deposits of cholesterol in the mucous membrane and to a lesser extent in the deeper layers of the bladder wall (strawberry gall bladder).

With regard to the etiology of gall bladder inflammation Boyd has come to the conclusion that streptococci of low virulence are the most common causes of cholecystitis and that bacteria reach the organ by both the blood and the lymph stream (after the first part of the duodenum or the appendix).

In a study of the origin of gallstone groups were recognized: the metabolic or septic stones and the inflammatory or septic stones.

A metabolic stone is large or single and white. It is composed entirely of cholesterol. It is known as the cholesterol stone. It is apparently formed solely as the result of a disturbance of liver metabolism. Cholesterol is kept in solution by the bile acids but this solubility is dependent not only upon the amount but also upon the relative proportion of the acids. Any disturbance in the acids and an increase in the cholesterol may be followed by precipitation of the latter. The stone is distinguished by its radiate structure as opposed to the concentric structure of the septic or inflammatory stone. It is a silent stone. As a rule the gallbladder has no evidence of inflammation but if the stone becomes impacted in the neck of the gallbladder the acute stricture which then results is apt to be followed by infection. Should the stone fall back into the bladder and all the bile to reenter the depot of bilirubin calcium is deposited upon the cholesterol lithare. The formation of a pure cholesterol stone is favored by such factors as high blood cholesterol, high bile cholesterol and bacteria in the gallbladder.

The author recognizes three varieties of stones: the pigment type, these are multiple, about the size of a grain of rice, black and brittle. The contraindication for their removal is the one which so frequently complicates hemolytic jaundice.

The most common variety of gallstones is the infective or septic type. These are the faceted cholesterol pigment calcium stones which on section present a characteristic concentric arrangement of laminae. All the members of the family are about the same size but the emulsion is not uniform even though the family is. In addition the emulsion may be more or less combined with the septic. The result of inflammation of the gallbladder is a mixture of pus, mucus, bacteria and epithelial debris. The outpouring of an acute attack of gallbladderitis is more or less a decided entity but is the same at the neck, subhepatic region and the area of the little nuclei of organ. After are leprosy, the cholesterol and bilirubin calcium. In this manner the family of faceted septic stones is formed.

Boyd thinks that many stones are formed from lipid material from over-oxidized bile in the gallbladder (as in the straw-berry type of inflammation). These are so formed the nuclei of new stones.

JOHN J. MALONE, M.D.

Owen H. R. Spontaneous Rupture of the Gall Bladder into the Duodenum. J. S. G. 9.

A man 4 years of age was admitted to the hospital with a history of vomiting blood. The onset of the vomiting was followed by profuse sweating and faintness. The only previous symptoms were gaseous eructations and acidity for three weeks. The temperature was 98.6 degrees F., the pulse 90 and the respiration 20. A mild secondary anemia was found. The liver was palpable but no masses were felt and there was no point of acute tenderness. A raw erosion suggested duodenal ulcer but a fistulous opening between the gallbladder and duodenum was also considered.

Operation revealed a fistulous opening between the gallbladder and duodenum which was surrounded by firm adhesions. Posterior gastroenterotomy was followed by uneventful recovery.

I. E. ARD L. KOW, M.D.

Judd L. S. and McIntire S. H. Cholesterosis of the Gall Bladder. J. S. G. 9.

One thousand cases of cholesterosis of the gallbladder were studied. In half of them gallstones were found. About 80 per cent of the patients in each group were female. The incidence of the condition increased up as high as between the thirty-fifth and fortieth year of age. Typhoid fever, otitis media, the history of about 8 per cent of routine autopsy cases and as given in 35 per cent of the histories in the case reviewed. Obesity as present in 24 per cent of the cases without stones and in 3 per cent of those with stones. Pregnancy had occurred in 58 per cent of the former and 67 per cent of the latter. The majority of the women traced the trouble to the time of their first pregnancy.

As indicated in the right upper quadrant and in the majority of cases in each group radiated later posteriorly. Morphine was required for the relief of the pain in 5 per cent of the cases without stones and in 4 per cent of those with stones. The radiation of symptoms was slightly longer in the cases without stones. Ingestion of an intimate general complaint in both groups. True qualitative food history as present in 40 per cent of the cases without stones and in 50 per cent of those with stones. Belching or bloating or both occurred in 55 per cent of the former and 61 per cent of the latter. Vomiting occurred in 35 per cent of the cases without stones and in 45 per cent of those with stones. Jaundice as present in 7 per cent of each group and chills and fever occurred in about 10 per cent of each group.

II. Riley J. S. Jr. Experimental Study of Cholesterosis of the Gall Bladder and Cholelithiasis. J. S. G. 9.

Horsley's experimental study is made to determine the immediate and remote after effects of

cholecystogastrostomy and *cholecystoduodenostomy* on the gall bladder the bile ducts and the liver

Seven cholecystogastrostomies combined with occlusion of the common bile duct 3 cholecystogastrotomies without interference with the common bile duct and 9 cholecystoduodenostomies with occlusion of the common bile duct were done on dogs. Three groups of control dogs were studied to compare the condition of the biliary system. The first group was made up of dogs that had never been operated upon the second of those that had had 1 or more operations on the femoral and carotid arteries and the third of those that had been subjected to 1 or more operations on abdominal viscera (gastrostomy enterostomy etc.) All of the operations were performed under ether anesthesia after a preliminary injection of morphine.

The technique of the cholecystogastrostomy is described in detail. The technique of the cholecystoduodenostomy was practically the same.

Of the 9 dogs subjected to cholecystoduodenostomy 5 died within a week after the operation from peritonitis due to leakage at the anastomosis. The high mortality was due to partial pulling loose of the anastomosis with subsequent leakage and peritonitis. In dogs the walls of the duodenum are much more friable than the walls of the stomach and the duodenum is more movable and exerts more traction on the gall bladder than does the pyloric portion of the stomach. The traction is due in large part to the impossibility of keeping the dogs prone and restraining their activity. The normal wall of the gall bladder of the dog is very thin.

In the 10 cases of cholecystogastrostomy with or without occlusion of the common duct there was no operative mortality. In 7 of the 10 cholecystogastrotomies the common bile duct was occluded and in the others was left intact.

The general postoperative condition of the 14 dogs upon which successful operations were performed seemed practically the same. Judging from the animals' appearance and ability to gain and maintain weight the health of these dogs seemed to be only slightly below that of the control groups. None of the animals showed gross evidence of jaundice and all gained weight slowly and maintained it until they were killed.

The dogs were killed at periods varying from 1 to 4 months after the operation. In all of them the gall bladder liver and bile ducts had become infected and showed definite evidence of a pathological change. In most of them the gall bladder was contracted. The walls of the gall bladder were thickened the mucosa was congested and granular and sometimes ulcerated and microscopic sections showed evidence of subacute and chronic inflammation. The liver showed pathological changes varying in degree from slight points of central necrosis with scattered leucocytic and lymphocytic infiltration to more marked necrosis with diffuse and milary subacute and chronic inflammation particularly around the ducts and vessels. In several

instances enlarged hyperplastic lymph nodes were found in the region of the anastomosis. In dogs subjected to cholecystoduodenostomy the gall bladder was filled with hair and contained intestinal round worms which had worked their way up into the liver through the ramifications of the biliary ducts. These

gall bladders presented areas of superficial ulceration and subacute cholecystitis. The biliary passages and the liver also showed subacute inflammation.

In the dogs living for a month or more after the operations with occlusion of the common duct the common and hepatic ducts showed marked dilatation. Single and double ligation of the common duct usually will not produce a permanent occlusion. Double or triple ligation with severance of the common duct between the distal ligatures was found more satisfactory.

DUBOIS believes that cholecystogastrostomy is winning favor over cholecystectomy and cholecystostomy. He describes the technique in detail. The indications for the operation are the following:

1 Common duct obstruction in patients who are poor surgical risks because of extreme illness complications or is associated physical diseases.

2 Cases of residual hepatic duct stones in which secondary common duct obstruction is probable.

3 Chronic or intermittent jaundice of obscure origin or jaundice secondary to inoperable diseases of the liver pancreas or duodenum causing obstruction to the common duct.

4 Infection of the gall bladder.

5 As a substitute for external drainage consequent to operations on the upper abdomen after the removal of gall stones.

6 Gastric ulcer. When feasible in such cases the operation should be performed at the site of the perforation of a pyloric or duodenal ulcer.

7 For the free drainage of bile in acute pancreatitis.

8 As a routine measure in inflammatory conditions of the bile ducts. In such cases the operation should supersede cholecystostomy because as the bile follows the path of least resistance cholecystostomy is frequently followed by the loss of practically the entire output of the liver and a condition of acholia.

9 Cases of stricture of the biliary ducts other than that due to stone. In such cases cholecystogastrostomy should supersede choledochotomy and plastic surgery because it is simpler and safer and gives equally good results.

Cholecystogastrostomy is contra indicated by cancer and gall bladder neoplasms gangrenous cholecystitis atrophy or contraction of the gall bladder and obstruction of the cystic duct other than that produced by stone. EMIL C. ROBITSHEK M.D.

Sweet J. L. The Importance to Surgery of the Cystic Duct. *J. Surg.* 97: 74.

The cystic duct is an extremely tortuous tube containing on its inner surface throughout its entire length folds of mucous membrane arranged in

a more or less spiral fashion which divide the duct essentially into a series of small chambers. The openings from one chamber into the next are not opposite each other but are so placed that the channel of flow is rendered extremely tortuous than would be determined by the external form alone. The number of these valves and the shape of the chambers formed by them are inconstant.

The purpose of this curious arrangement is not clear. It may be a mixing device. It may be a device to impede the flow of bile from the gall bladder. Such an arrangement would offer resistance in direct relation to the viscosity of the fluid flowing through it. According to the work of Rous and McVae, bile flowing out of the gall bladder (if bile ever normally flows out of the gall bladder) would possess at least ten times the viscosity of bile flowing into the gall bladder since it is at least ten times as concentrated as bile.

Whatever the normal function of the small chambers along the cystic duct, Street is convinced that their size and shape determine the size and shape of the multiple faceted gall stones found in the gall bladder. In every gall bladder containing multiple faceted gall stones that he has obtained with ducts attached, the multiple faceted stones found in the gall bladder were seen to fit into the pockets along the cystic duct, with neck and infundibulum of the gall bladder and the shape of these pockets could be predicted from the form of the stones found in the gall bladder. Street believes that these stones must arise as fits which lodge in the pocket and assume the shape of the latter. Chemical processes then take place which change the colloidal masses into crystalline stones. The cystic duct becomes blocked. The pressure which in the presence of a competent sphincter of Oddi causes dilatation of the entire extrahepatic duct system after cholecystectomy forces the stone out of the cystic duct into the gall bladder since the blocking of the duct by the stone produces a functional cholecystectomy. The process then repeats itself until one may find a large collection of stones of the same general shape or of varying sizes and shapes according to the character of the pocket formed by the valves of Heister.

The author maintains that the valvular arrangement of the cystic duct is responsible for increased tension in the gall bladder and consequently for all gall bladder pain sensations; hence the cause of this symptom. To overcome it he recommends more complete removal of the cystic duct or section of the muscle of Oddi. J. N. J. M. NE. MD.

Ivy A. C. F. Experimental Pancreatic Secretion. J. 1
M. 1. 971. 3.

The external pancreatic secretory response to a meal may be divided into two phases with reference to the sites at which the stimuli are acting—the cephalic phase and the intestinal phase. The intestinal phase is the more important as the amount of secretion produced in this phase is greater than that produced during the cephalic phase.

It is quite obvious that there are certain substances in the intestinal tract that excite pancreatic secretion. Recently bile has been added to the already long list. Several theories have been advanced to explain the mode of action of these substances.

Experiments have shown that acid, such as tenth normal hydrochloric acid, increases the pancreatic secretion when it is applied to the intestinal mucosa. This may be due to the entrance into the blood of a hormone which stimulates the pancreas. Mellanby has shown that the introduction of bile into the duodenum causes pancreatic stimulation. The bile salts seem to be the exciting agents.

The possibility that a local nervous mechanism is operating in bile stimulation has not been ruled out by physiological experiments. It is evident that the pancreas is adequately stimulated by food even in the absence of bile and that therefore bile is only an adjuvant and not an essential alimentary stimulant.

Olive oil introduced into the stomach has been found to stimulate pancreatic secretion within a short time. In experiments in which the author introduced olive oil into the stomachs of dogs with a pancreatic fistula he found that there was usually a pancreatic stimulation in from five to ten minutes but this did not occur invariably. The same was true when olive oil was given through a tube to dogs with a pancreatic transplant.

It is quite likely that several factors operating together in the intestine cause the stimulation of pancreatic secretion.

Although the pancreatic secretion is the most important of all the digestion secretions, less is known about it than about the gastric secretions. Comparatively little research has been done on the effect of various disease conditions on the secretory mechanism of the pancreas.

The author has been attempting to find a non-toxic dye which will give accurate knowledge concerning the quality and quantity of pancreatic secretion and eliminated by the pancreas instead of by the stomach, intestinal mucosa or liver. Although he had tried thirty-three dyes, only two have appeared in the secretion. These two were methylene blue and methylene violet. From 30 to 60 mgm of the dye was dissolved in 25 ccm of physiological salt solution and given intravenously. Methylene blue gave a faint tinge to the secretion after two hours. Methylene violet gave a better reaction but proved somewhat toxic and was eliminated in slight amounts in the gall bladder bile.

From these observations it is evident that the pancreas is highly selective in the elimination of dyes. HAROLD M. CAMP, MD.

Desplas B. and Roux Berger J. L. Rupture of a Pancreatic Hematocoele into the Peritoneal Cavity (Hémotélépécéte mp dsl g d télépécéte) Bull. mém. S. c. n. d. cl. 1971. 49.

The patient whose case is reported is a man 26 years of age, who was operated upon May 27, 1957 for

ulcer of the duodenum a posterior transmesocolic gastro enterostomy being performed. The operation was followed by recovery. After a time however there developed in the left hypochondrium a painful point which had no relation to the ingestion of food. On July 10 the patient had a sudden attack of intense pain associated with vomiting, diarrhoea and fever of from 38.5 to 39.3 degrees C. An emergency operation performed on the sixth day revealed a pancreatic hæmatocele which had ruptured into the peritoneal cavity. The patient recovered.

There was no fatty necrosis of the pancreas in this case. In the few cases without necrosis that have been reported by others the mortality was much higher than in those with necrosis. In the authors case there was no disease of the bile tract in both the first operation which was performed by Roux Berger and the second one which was performed by Desplas the bile tract was found normal. The authors regard it as questionable whether the gastro enterostomy had anything to do with the pancreatitis. They believe it possible that the pain and pancreatitis were the result of a disturbance of duodenal function but no other case of hæmorrhagic pancreatitis after gastro enterostomy has been reported and Desplas suggests that a disturbance of pancreatic function may be responsible for the fatal complications of gastro enterostomy attributed to vicious circle.

AUDREY G. M. ROAN, M.D.

MISCELLANEOUS

Begg R. C. The Urachus and Umbilical Fistulae. *Surg. Gynec. & Obst.* 1917, 24, 65.

The urachus is the modified superior extremity of the bladder and is derived from the ventral cloaca. At birth it is at the level of the umbilicus and attached by three fibrous bands, one to each umbilical artery and one passing into the umbilical cord. Following birth the bladder descends taking the urachus with it and dragging the fibrous cords along.

In a series of dissections of the bladder and urachus Begg found a communication between the two in 33.3 per cent. In the rest the urachus was patent but ended blindly just external to the mucous membrane of the bladder. Urinary fistula of the umbilicus is never due to a patent or persistent urachus; it is caused by urine extravasated from the bladder which travels along the transversalis fascia.

The author analyzes fifty-eight cases of congenital umbilical urinary fistula which he collected from the literature and concludes that these cases prove that the urachus is developed from the ventral cloaca and that the urachus does not communicate with the umbilicus.

The treatment of urinary fistula at the umbilicus is surgical. I. LEWIS BISHOP, M.D.

Truesdale P. E. The Thoracoperitoneal Operation for Hernia of the Diaphragm. *Ann. Surg.* 1917, 64, 38.

Cases of diaphragmatic hernia have been reported in which it was impossible to close the diaphragmatic opening by the peritoneal approach. Failures by the thoracic route have been fewer but with the usual procedures the mortality varies from 5 to 50 per cent on account of accompanying intestinal obstruction.

In more than 50 per cent of cases the colon is found above the diaphragm. Although the stomach and small intestines may pass through the opening with the transverse colon the site of constriction is almost invariably in the transverse colon. In cases with acute intestinal obstruction the mortality is higher than that of acute intestinal obstruction in general because closure of the aperture is necessary to make the operation complete and this requires extra time.

Reduction of the mortality from 50 to 5 per cent can be accomplished by a two stage operation consisting in (1) appendicostomy or cæcostomy to relieve the obstruction and (2) an operation for repair at the time of election. The preliminary operation promptly relieves obstruction and provides a safety valve in case of recurrence or distention during convalescence from the repair.

In the use of the thoracoperitoneal route described by the author a large window is made in the thoracic wall by a lapel incision. Beginning at the lower edge of the sixth rib in the post axillary line the thoracic wall is divided in a downward direction with severance of the seventh and eighth ribs. The incision then turns at a right angle and follows the eighth intercostal space forward until it reaches the cartilaginous portion where it turns upward and again crosses the eighth and seventh ribs. The flap so formed which includes the pleura is completely turned upward on its base the diaphragm being thereby exposed from above. The under side may be approached when necessary by continuing the anterior vertical portion of the incision downward through the left rectus muscle. In some cases it may be advisable to split the diaphragm from its anterior edge to the hernial orifice. This permits visible access for the separation of adhesions and facilitates closure of the ring. The peritoneal wall is then closed. The thoracic flap is turned back and closed tightly with interrupted sutures. The procedure is shown in several illustrations.

The author reports a case in which a congenital hernia with extensive adhesions above and below the diaphragm was successfully repaired by his method after two attacks of acute intestinal obstruction and three attempts at repair by the peritoneal route. MAURICE MEYERS, M.D.

GYNECOLOGY

UTERUS

Shaw W F Wertheim's Hysterectomy for Carcinoma of the Cervix *Lancet* 1917 cii 538

Wertheim's hysterectomy has been performed in England for over 20 years. Of 76 patients upon whom Shaw operated more than 5 years ago 16 (1 per cent) died as the result of the operation.

(2.6 per cent) died from some other cause 25 (33 per cent) developed a recurrence 3 (3.8 per cent) cannot be traced and 30 (39.5 per cent) are now alive and well.

Of 50 patients operated upon more than 7 years ago 11 died immediately after the operation 1 died from another cause 18 developed a recurrence 4 cannot be traced and 16 (32 per cent) are now alive and well.

Of the patients upon whom Shaw operated more than a year ago 68 were treated with radium previous to the operation. Of these 8 (41 per cent) are alive and well whereas of the 59 who were not treated with radium only 18 (3 per cent) are now alive and well.

ALBER M VOLLIER M.D.

ADNEXAL AND PERIUTERINE CONDITIONS

Shaw W Oulation in the Human Ovary. Its Mechanism and Anomalies *J Obst Gynaec F I E p* 1917 409

The features of follicle ripening, the mechanism of the approach of the ripening follicle to the surface of the ovary, and the histological changes at the stigma immediately before and after ovulation are described and an account is given of the method of temporary and permanent closure of the stigma.

It is a typical finding in hyperæmic ovaries that ripening follicles tend to distend because of the gross congestion of the theca interna layers of the follicle. Moreover these follicles can be seen easily with the naked eye and are responsible for the majority of hæmorrhage occurring in such ovaries. In all cases however the hyperæmia is limited to the theca interna layer and as the granulosa layer is not vascularized there is no blood in the cavity.

Since the capillaries in the proliferating theca interna layer are young and delicate it follows that if the primary ovarian hyperæmia is extreme the wall of the capillaries may be unable to resist the capillary pressure. An interstitial hæmorrhage then occurs in the theca interna layer and the resulting condition is a follicular hæmatoma.

The hæmorrhage is bounded internally by the membrana limitans interna of the follicle and does not invade either the granulosa layer or the cavity. Externally it is surrounded by the dense stromal tissues of the cortex. In no case has a large diffuse

stromal hæmatoma been seen the hæmatoma is always localized around the follicle.

There is obviously a close parallel between the etiology of this form of hæmatoma and the etiology of corpus luteum hæmatoma. In both cases there is a primary ovarian hyperæmia and in both cases this leads to the rupture of the walls of delicate newly formed capillaries. In the case of the follicular hæmatoma the latter are the capillaries of the theca interna layer of a ripening follicle whereas in the case of corpus luteum hæmatoma they are the capillaries of the granulosa lutein layer when this layer is becoming vascularized.

E L CORLETT M.D.

MISCELLANEOUS

Johnstone R W Developmental Changes During

Adolescence *B M J* 1917 44

Paton J H P The Influence of the General Health on Menstruation *B M J* 1917

444
Clove A E S The Prevention of Menstrual Troubles *B M J* 1917 446

JOHNSTONE defines the period of adolescence in the female as extending from the time when the changes of puberty begin to manifest themselves to the time when the function of menstruation has become regularly established. The secondary sex characters have become fully developed and the girl has practically reached her full physical stature.

The changes occurring in the anatomy and physiology of the body during these years are the most momentous of the entire lifetime. The almost aseptic child develops definitely and rapidly toward femininity. Complete development takes time. Even the regular establishment of menstruation does not in itself indicate complete physiological or anatomical maturity. The bony pelvis probably does not reach its full size and width until the twenty-second or twenty-third year. The young woman may then be said to have reached the age of nubility and can become a mother with safety. Long before this however the external and internal organs of generation have acquired the adult characters and functions: the uterus, tubes and vagina have developed to more mature proportions; the ovaries have increased in size; the regular ripening of the follicles, the discharge of ova, and the development of corpora lutea have begun and maternity is possible.

With these changes there are alterations in the blood and lymph balance and in the biochemistry of the body. The entire organism is concerned in the changes of puberty and adolescence. As the result of modern research the old belief that the development of the secondary sex characters is due wholly

to the internal secretions of the ovaries must be modified. We now have reason to believe that all of the glands of internal secretion are involved in the process. An additional impetus toward femininity is given by fertilization of the ovum by a particular variety of spermatozoon.

In conclusion, Johnstone emphasizes that puberty and early adolescence are critical periods in which unhygienic methods of living may easily produce disastrous results affecting both body and mind.

PATON states that the regimen practiced during the premenstrual phase is probably of greater importance in securing normal menstruation than that carried out during the stage of hemorrhage.

He calls attention to the fact that since the introduction of regular games into school curricula the health of girls has been greatly improved. By such exercise a high standard of physical and mental fitness is assured when the changes of puberty appear. With the supervision of menstruation it becomes necessary to decide whether active games should be permitted during the period or not. It is undoubtedly true that active games may be continued by many girls during menstruation without harm and perhaps even with benefit. Some gynecologists advocate this practice in schools, believing that it lowers the incidence of dysmenorrhea. Paton, however, doubts the wisdom of the recommendation, basing his opinion on the results in the St. Andrews School for Girls. In this institution games, gymnastics, Swedish drill, and dancing are forbidden during the first 3 days of the menstrual period, but walking is continued except by those who are definitely incapacitated. So satisfactory are the results that Paton sees no reason to make any change. The girls of this school are drawn from the well to do classes. Excluding occasional dysmenorrhea, 90.4 per cent are free from regular pain. In regard to the regularity of menstruation, Paton found that of 78 girls questioned at the age of 17 years, only 43 experienced regular menstruation. The type of irregularity was intermittent amenorrhea.

CLOW states that menstruation can be and therefore should be free from suffering of any kind. This was the case in 89.2 per cent of school girls studied and 94 per cent of students leaving a training college. Clow has found it very rare for symptoms to occur during the first few months of menstrual life, and that if a girl is allowed to be guided by her own inclinations during the period she will nearly always exercise as usual. Her desire for activity is no more diminished than her desire for food or sleep.

Clow therefore permits menstruating girls to have their warm baths to cycle to play hockey and tennis and to do drilling and gymnastics as usual. Emphasis is laid on the importance of such exercise on the first and second days of the period. As the result of such instruction the proportion of girls who suffer at the period has been reduced from 46.7 to 10.8 per cent.

ALBERT M. VOLLMER, M.D.

CHATILLON F. Sterility of Uterine Origin. Diagnosis and Treatment. (La stérilité d'origine utérine. Diagnostic et traitement.) *Gyn. et Obst.* 1917, xvi, 81.

DOUAY E. Sterility of Tubal Origin. Diagnosis and Treatment. (La stérilité d'origine tubaire. Diagnostic et traitement.) *Cydec. et Obst.* 1927, xvi, 111.

CHATILLON is inclined to believe that in sterility of uterine origin, cervical conditions such as stenosis, antelexion, inflammation, and secretory obstructions play the most important role. He discusses the various causes at length and states that in his opinion the gynecologist should never tell a woman that conception is impossible even if the findings of examination and tests point to that conclusion.

The treatment of sterility in the female should be preceded by examination of the male—gonorrheal tests and a study of the spermatozoa—and unless contra indicated by tubal insufflation and hysterosalpingography.

Any uterine infection may be the cause of sterility. Most commonly responsible are those localized in the cervix. Sterility may be the result of a condition entirely of uterine origin or of a uterine condition associated with pathological processes in the tubes or ovaries.

Certain uterine malformations may be corrected surgically so that fecundation, pregnancy, and delivery may be possible, but this is rare.

Uterine hypoplasia is amenable to treatment except when the uterus is of the fetal type, i.e., less than 4 or 5 cm. in length. The treatment of hypoplasia gives better results if it is begun at an early age. It should be directed toward the development of the organ by direct action or by indirect action through the ovaries. The general health must be taken into consideration. Among the best methods are slow and repeated dilatations, uterine massage, balneotherapy, opotherapy, and electrotherapy, especially diathermy. The functional stimulation of the ovaries by the roentgen rays is not to be recommended at the present time.

Cervical stenosis is not such an obstacle to fecundation as has been believed. It is frequently associated with other conditions such as uterine deviation, cervicitis, and malposition of the cervix.

Of all uterine deviations, antelexion is most often the cause of sterility. Retrodeviation plays a less important role than associated adnexal lesions. Cervical stenosis may be treated by slow and repeated dilatation with tents. This gives better results than dilatation with metallic bougies. Intra-uterine pessaries may be of value if they are left in place for a short time and during this time the patient remains under medical care. Good results have been obtained also from stomatoplasty.

For the correction of retrodeviation, pessaries may be tried. The author is not a strong adherent of this procedure, but is aware that it is frequently followed by pregnancy. He believes that low abdominal hysterectomy and shortening of the round ligaments are the methods of choice.

Fibromyomata may or may not interfere with fecundation. Those of the submucous type are most apt to do so. In case of submucous and interstitial fibromyomata the a lineal and endometrial changes may play a more important part in the causation of sterility than the neoplasm. Submucous myomata and fibrous polyp must be systematically extirpated by the vaginal route. Subserous and interstitial tumors should be left alone unless they go to a considerable size. The influence of small tumors is negligible. A contraindication to intervention is a blood myomectomy which post mortem examination of the uterus shows. While good results have been obtained with the roentgen ray by external roentgen treatment is not to be recommended for general use.

The function of the uterus and uterine mucosa is related to the change in the endometrium. Metropathic hypoplasia of the uterus is responsible for sterility and requires special treatment. Often curettage is necessary to establish the diagnosis as the usual signs—metrorrhagia or menorrhagia—are associated with polyp and cancer. The non-inflammatory endometrium usually leads to ovarian disturbance and requires treatment of the ovaries.

Polypoid curettage may stop the uterine hemorrhage, but often the cure is transitory. On the apical part, especially the use of corpus luteum, is of great value in regulating menstruation.

Treatment of the pleen with the roentgen ray has been employed with success and seems to be devoid of danger. In some cases ovarian irradiation has been successful but this method should be used only as a last resort as it may cause permanent damage to the ovaries.

Cerclage and endometrial constrictions of considerable importance in the causation of sterility require energetic treatment. To be efficacious the treatment must aim to complete destruction of the cervical mucosa. Filho cauterization and amputation of the cervix go down to the uterus with little risk so far as distension is concerned.

Chronic endometritis of the corpus is the cause of sterility less often than of repeated abortion. A history of gonorrhea or puerperal fever frequently suggests the cause of sterility. Coercage some times unavailing when the chief sign of the condition is uterine hemorrhage but is responsible for many infections of the tube. Gretpulverence is very in the use of the urethra. It is usually an indication of infection of the cervix. All treatment of the uterus cannot be expected by cure of the cervix alone. In the end cervicitis which contributes to the tubal factor to fecundation.

Douglas describes the various methods of a certain degree of permeability of the fallopian tubes and the different operations that have been proposed for

the treatment of sterility of tubal origin. He draws the following conclusions:

1. Before surgical treatment is attempted for sterility believed to be of tubal origin an examination of the peritoneal fluid should be made in order to rule out azoospermia which is responsible for about 15 per cent of cases of sterility.

2. According to the findings of tubal insufflation on cases of sterility may be divided into 2 groups—those with open tube constituting about 4 per cent and those with closed tube constituting 4 per cent. The insufflation test is not always decisive. There are cases in which it must be repeated several times. During the interval in such case medical treatment (massage d'athermy) should be administered. There are also cases in which the tubes are found to be closed at the initial test but open at a subsequent test. In such case the patient may become pregnant as the result of the therapeutic action of the test. Pregnancy has occurred in from 8 to 1 per cent of all cases of insufflation and in from 28 to 32 per cent of those in which the tubes were made permeable by the test.

3. By intra uterine injections of lipiodol the final degree of the insufflation test may be verified and the site of the closure and the exact site for surgical intervention may be determined.

4. Up to the present time most operations on the fallopian tube have been done for salpingitis only. Occasionally have surgeons intervened solely on account of tubal sterility. In some cases the surgeon has taken advantage of a other operative indication (paful salpingo oophoritis or overversion of the uterus appendicitis) to correct obliterating tubal lesions. Today because of the knowledge that can be gained regarding the exact site of such lesions it is rational to propose an operation to be performed solely to obtain permeability of the tube.

5. The operation which gives the best results in salpingitis is (the ligation of adhesions and opening of the glutinated fibrinated end). The operation that is performed most frequently is salpingostomy. Up to the present time favorable results have been obtained in only about 15 per cent of cases but they are gradually becoming more frequent. Tubo ovari implantation is still being studied. It may give very favorable results as it establishes tubal permeability with practically an intact tube. In extension of the fallopian tubes into the ovaries implantation may be done with some hope of success.

6. Cases of pre-natal following the operation described have not been numerous but they are increasing as the result of the accurate diagnosis and the proper choice of operation permitted by the new diagnostic tests and as the result of improvement in the technique. S. L. to I. P. M. D.

OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

Siegel I A Liver Function in Pregnancy 1m
J Obst & Gynec 1927 111 300

In 174 cases of pregnancy 15 injections of brom sulphalein were given. There were no reactions and no thrombosis. In 3 cases in which the dye was injected into the surrounding tissues or leaked out of the vein local fibrosis was produced.

The author draws the following conclusions:

1. Bromsulphalein is a valuable agent for the testing of liver function. It is free from the dangers of phenoltetrachlorophthalein.

The blood pressure is perhaps not a true indicator of the toxic state. Hypertension without impairment of liver function may mean a good prognosis. Retention of bromsulphalein with a normal blood pressure perhaps indicates a mild type of involvement which requires watching but will probably take care of itself.

3. In cases of pre-eclampsia bromsulphalein is valuable in indicating the degree of toxicity and the reaction to treatment.

4. It is valuable in differentiating nephritis from pre-eclamptic and eclamptic toxemia.

5. It is useful in differentiating neurotic from toxic vomiting and is a guide to the results of treatment and the need for surgical interference.

6. In case of eclampsia it is perhaps useful in indicating the prognosis. F. L. CORNELL M.D.

Pierson R N Fibromyomata and Pregnancy a Study of 250 Cases 1m
J Obst & Gynec 1927 3 3

In 30,836 consecutive pregnancies there were 191 clinically important fibromyomata, an incidence of 0.6 per cent. Fifteen per cent were in the pelvis. Spontaneous abortion or premature labor occurred in 4.1 per cent of the cases. The incidence of important obstetrical abnormalities and complications is markedly increased by fibromyomata. Major operative interference was necessary because of the fibromyomata in 4 (2.14 per cent) of the 191 cases and in 73 per cent of the 30 cases in which the fibromyomata were situated in the pelvis.

The gross maternal mortality was 3.2 per cent and the mortality due to obstetrical causes 2.08 per cent. The gross fetal mortality was 35.6 per cent. The mortality in cases in which the fibromyomata were probably responsible was 0.7 per cent. Prematurity was the chief cause of fetal death. In Pierson's opinion the literature does not sufficiently emphasize the danger of fibromyomata to the mother and child.

During the pregnancy a special effort should be made to prevent abortion and premature labor.

Interference is indicated only by severe pain, bleeding or pressure which does not yield to treatment. At term a test of labor is often desirable.

If obstruction from the tumor persists or some other variety of dystocia is marked during labor, caesarean section should be done with myomectomy or hysterectomy according to the indications. The third stage of labor requires care to prevent hemorrhage from a poorly contracting uterus.

In the puerperium fibromyomata may undergo degeneration and necrosis. They may slough into the uterine cavity and become infected. When signs and symptoms point to the tumor itself as being primarily affected, radical surgery is indicated, but when the tumor is simply included in a general morbid process such as acute uterine infection, the indications for radical interference are less definite.

In the discussion of this report RUBIN said that he prefers conservative treatment even in the presence of slight bleeding.

LOVIE stated that a large number of pregnant women with fibroids will take care of themselves during labor and that he lets the women go to term and gives them a test of labor.

DAVIS reported two cases of pedunculated fibroids which were operated upon during pregnancy. In one the pedicle was strangulated. Both patients recovered and were delivered at term.

KOSMAK took exception to the attitude toward myomectomy during pregnancy and said that fibroids should be regarded more seriously before and after labor than during labor.

FRANK stated that in many cases the most favorable time for myomectomy is about the fourth month.

HEALY stated that it is better to do the myomectomy in the presence of the pregnancy and take the risk of a possible subsequent spontaneous abortion than to interrupt the pregnancy with the idea of doing a myomectomy later and hoping that the patient would then conceive and go to term.

L. I. CORNELL M.D.

Hofbauer J A Study of an Undescribed Type of Premature Separation of the Normally Implanted Placenta 1m
J Obst & Gynec 1927 11 86

The specimen described is of interest on account of the very small area of placental separation which caused pronounced clinical symptoms. The concealed hemorrhage was sufficiently extensive to peel the membranes from the entire uterus wall except at the placental site. *A priori* it would seem improbable that a concealed hemorrhage of 600 c.c. could arise from the minute area of separation which was detected in the fundal region. The

hemorrhage remained concealed because of the firm adherence of the membranes to the lower uterine segment. For several hours preceding the onset of the serious condition only a small amount of blood found its way into the vagina.

Hysterectomy as alone it is believed to be the procedure which would best assure hemostasis since the presence of multiple myomata and extensive hemorrhagic infiltration pointed to a seriously damaged condition of the uterine muscle with the probability of enormous postpartum bleeding if the uterus was not removed. I L C L L M D

Watson J St G Three Cases of Rupture of the Uterus at the Site of a Previous Cesarean Section. *Lancet* 1917 599

In one of the author's three cases of rupture of the uterus at the site of a cesarean section scar the rupture occurred before the onset of labor. In each case the placenta was located under the site of the scar. W T R F L L M D

LABOR AND ITS COMPLICATIONS

Hevitt J To a T D and B D D The Relative Merit of the Instrumental and Medical Method of Inducing Labor. *J Obstet Gynecol* 1917 5

The introduction of the intra-uterine bougie is a more certain method of inducing labor than Watson's medical technique. Reinsertion of bougies is more successful than rejection of medical induction. Watson's method particularly ineffective in inducing premature labor. Its inadequacy is the more apparent the more premature is the case. The bougie however is equally effective throughout the various stages of pregnancy. A preliminary unsuccessful attempt at Watson's method does not increase the success of subsequent instrumental induction. The author pronounces the advantage of instrumental over medical induction in certain conditions.

The larger association with medical induction are less common than the association with instrumental induction. However the dangers of instrumental induction (notably sepsis) cause severe induction fails where a therapeutic follow-up medical induction can occur only if the upper extremities are septic infection is not uncommon after the use of the bougie. The time interval neither the sole nor the main factor in the product of forceps. The author suggests that the chief danger in leaving the bougie in the uterus for more than 4 hours then in reinserting the bougie. While the time interval influenced in some cases the accuracy and urgency of the induction on the entire remarkably persistent upon these facts.

The number of bougie introductions has no relationship to the success of the method. The coincident administration of pituitary extracts to hasten the action of the bougie is associated with the uterus. Watson's method may be employed with success to reinduce uterine contraction in cases of arrested

first stage. The probable failure of Watson's method is a safeguard against accidental induction of premature labor by miscalculation of dates as in inductions of convenience and cases of supposed postmaturity. Honeyman's investigations suggest that pituitrin is present in the blood in increased amount during normal labor.

The author recommends that in non-urgent cases Watson's method be tried and repeated if necessary, that if the case is or becomes urgent instrumental induction be employed and that whenever bougies are used pituitrin be injected intramuscularly at regular intervals. E L Co NELL M D

Gibbs D G F An Investigation into the Results of Breech Labor and of Prophylactic External Cephalic Version During Pregnancy with Note on the Technique of External Version. *J Obstet Gynecol* 1917 599

In 22 per cent of 21 cases of delivery—35 those of primiparae and 186 those of multiparae—the child was born dead and of the children who were born alive 13 per cent died within the first ten days. Of the uncomplicated cases 29 were those of primiparae with a fetal mortality of 28 per cent and a neonatal death rate of 35 per cent and 106 were those of multiparae with a fetal mortality of 14 per cent and a neonatal death rate of 1 per cent.

These figures suggest that this series of cases as an extraordinary unfortunate one with appalling results or that the general attitude toward the dangers of breech labor is unduly optimistic and the fetal mortality usually given is far too low.

The remedy must lie either in improvement of the technique of breech delivery or the elimination of this unfavorable presentation so far as possible.

External version during pregnancy seldom fails in its object and is free from serious risk to either the mother or the child. It should be attempted as a routine soon after the thirty-second week of pregnancy and if it fails a further attempt should be made soon after the thirty-fourth week. If necessary an anæsthetic should be given before the decision is made that version is impossible.

F L COR L M D

MISCELLANEOUS

Watson B P The Responsibilities of the Obstetrical Teacher in Relation to Maternal Mortality and Morbidity. *A J Obstet Gynecol* 1917 77

The maternal mortality from all causes in all countries ranges from 4 to 7 per 1,000. In the last 20 years it has shown little change. While there has been some reduction in the last 50 years the decrease has not been so rapid as that noted in the general death rate.

Watson believes that today there is a greater need than ever to warn against the use of some midwifery since because of increased hospital facilities the attendance of trained nurses is the cause of the

which a set up for operation can be made there is more temptation to interfere

With regard to the training of the medical student in obstetrics he states that clinical study should be preceded by a course of theoretical instruction largely in the form of lectures demonstrations and the reading of a standard textbook. In the planning of the course of clinical instruction emphasis should be placed on diagnosis. Diagnosis can be learned only in the prenatal clinic and prenatal wards. Also in the prenatal clinic the student should be taught the importance of the various complications of pregnancy especially the early and late toxæmias the anæmias the heart affections and the focal infections. When abnormalities are detected he should hear the advice given regarding them.

With such teaching and practice in the prenatal department the student is in a position to study and conduct labor. He should have been drilled in aseptic technique by his surgical training but according to the author's experience he is often very deficient in this. The technique should be as simple as efficiency will permit.

A not inconsiderable part of the total maternal mortality is due to antepartum hæmorrhage. The student must be impressed with the importance of this complication and the necessity for consultation and hospital care as soon as it becomes evident.

When sepsis supervenes the student should be taught to visualize the processes going on in the body and to realize the danger of interference with the interior of the uterus.

When hospital accommodation is obtainable it is easier for the practitioner to live up to his ideals in the conduct of labor than when he must care for the case in the patient's home. In the hospital his patient is watched by competent internes or nurses while he proceeds with the rest of his day's work and he is called only when necessary. Watson suggests that somewhat similar advantages might be obtained in obstetrical practice outside the hospital by active co-operation between a trained obstetrical nurse and the doctor.

In the discussion of this report NORRIS said that in recent years better results have been obtained as the result of more frequent hospital care of obstetrical cases. The trouble with the system of team work between a specially trained nurse and the doctor in remote districts is that the work would fall largely on the associated trained obstetrical nurse. Norris would prefer the slogan more obstetrical hospitals.

BLAND said that the medical student must be impressed with the well known truths that successful obstetrical practice requires zealous prenatal supervision and an aptic watchful waiting plan during labor.

NICHOLSON stated that much of the time spent by the medical student on the benches or assisting at gynecological and obstetrical operations is wasted and that if it were devoted to the study of prenatal cases and the use of the midpelvic and low forceps both the student and his future patients would be benefited.

E. L. CORNELL, M.D.

GENITO-URINARY SURGERY

ADRENAL KIDNEY AND URETER

Legu E v nd P l ol The M t lty of the Re
rd Ielvis Studied in the Freshly Excised
K dney (l m t t d b t ét d u l e r
f l hem t é h t é) J l l d t l
a b

The authors studied the mortality of the renal pelvis in 4 kidneys from 15 cases because of tuberculous hyaluronophorosis and stenosis. They determined the pelvic color fluid and watched the escape of the fluid from the ureter. In 3 instances contraction occurred spontaneously. In the other 2 instances produced by traction on the ureter pinching or touching the wall of the pelvis, picking gravel or sudden filling of the pelvis or stimulation by the electric current.

The results were the same for the other two mole fractions. For a short time no effect was noted. The plastic acted in mass rapidly and energetically. The subsequent expansion was much slower. During the resting period which followed and was very long repeated excitations had no effect.

The contractility of the pelvis was strongest early in the experiment and weakened progressively until the final death of the kidney. Excitation in the region of the ureter provoked a typical contractile response which propagated from the site of excitation to the pelvis, although the pelvis as far as the insertion of the calyces. The contraction of the pelvis was not followed by ureter intubation.

Excitation in the region of the pelvis for the calyces caused contraction of the pelvis which retracted into the ureter. Erection occurred at the beginning of the diastole which followed.

E citation th bulbar reg n iz ne of p clo
uretral function) prolucl e lts that e e ap
pare tlv h cordit In c i e 2 s of con
traction start d fr m the pont of e c t a t n on
running up ar l t urd the pelv s nd the ther
downward al g the urte A e t untime elap ed
between the fr t and econd ejacul t n althou h
the contraction of the pelv s continued The e
phenome a were obe ed in 6 k d e that vere
di tend d w th col rel e um A tot llv diff rent
phenome o as n in the c e of the non d s
tendel pelv In n ca e hich the exc tory
apparatus mht h be n c iderel perfectly
normal excitation f the uer and pelv o oked
contracti ns ith t ejacul t ns wh rea e cit
tion of the bulbar g n p okel c nt act on fol
lowed by ejacul t It appe r that the bulbar
region has a ph y o l o g i c a l i d u l t y h i c h i
of importance in th p thog ne of pel ic reten
tions

The results obtained in these examinations corresponded in general to those obtained by proctoscopy performed shortly before nephrectomy. In particular they confirmed the presence of a sphincter function at the juncture of the pelvis and ureter which controls evacuation of the pelvic contents and assures its intermittent rhythm. Excitation in the zone provokes sometimes ejaculation sometimes retention on from spasm. It is evident that the excretion of urine is not a hydraulic phenomenon but is dependent upon a delicate neuromuscular apparatus which in its function resembles similar apparatus belonging to other hollow organs.

In the discussion of this report CHEVASSU cited a kidney in which he had produced contractions over a period of 50 minutes by pressure on the capsule. It seemed to him that the contractions were produced by the increase in the pressure of the intrarenal fluid.

GLOUCE CARPENTE

Perr n W S A N m lly Placed Right Kidney
P sses ng T o Pel e and T o U ters Op
ing Separ tly into the Bladder the Center
P t of the Kidn y Bet een the Pel es Be g
Occupied by a Gr it Tumor P R, S c
M d L o d 9 7 8 7

The specimen described was removed from a man 54 years of age who gave a history of recurrent painless hematuria for eight months with the occasional passage of clots which caused difficulty in micturition.

Cystoscopy revealed two ureteral orifices on the right side of the bladder. Blood was passing from the upper one.

Indigo 1 mine appeared from the left ureter and from the right lower ureter in ten minutes. No color as observed coming from the right upper orifice in a period of twelve minutes.

The blood urea was 0.058 per cent. The urine was sterile and contained nothing abnormal except a few red cells.

The pyelogram reveals 2 opel es to the kidney on the ri ht side the lower one of which is some hat la ger than the upper one

HARRY A. GOLDBERG

Perrin W S An Ectop Kidney itl a Triple
U eter Remo d from a M n Aged 41 Y a s
P R S M d L ! 9 7 8 6

The patient whose case is reported gave a history of 3 attacks of pain in the left iliac region radiating to the pelvis and associated with immaturity of frequency of urination. The first attack occurred 4 months, the second attack 2 months and the third attack 4 days before his admission to the hospital.

On cystoscopic examination blood was seen pass from the left ureteral orifice. Pyelography showed moderate hydronephrosis of a kidney lying in the hollow of the sacrum and a normal right kidney in the usual position. Bimannual examination revealed a tender swelling in the pelvis.

The urine had a specific gravity of 1.010 and showed one eighth volume of albumin. Blood cultures revealed streptococci but no tubercle bacilli. The renal efficiency test showed the blood urea to be 0.06.

The kidney was lying in the hollow of the sacrum. It had 3 ureters uniting to form a small sac which opened into the bladder by a single orifice. The sac contained a large calculus which obstructed the upper 2 ureters entering it.

HARRY A FOWLER M D

Hellstrom J. Contribution to the Knowledge of the Etiology of Hydronephrosis. *Acta chirurg Scand.* 1927 111:167

The author reports 2 cases of hydronephrosis in which the pelvic dilatation was probably due to the oblique course of the upper end of the ureter through the pelvic wall probably congenital. He discusses also a case in which spastic conditions at the uteropelvic juncture were apparently responsible.

Martin Laval and Pasteur. Small Painful Hydronephrosis. Enervation of the Kidney and Nephropexy. Late Results. (*Lettre hydronephrose douloureuse. Enervation du rein et néphropexie. Résultats éloignés.*) *J d urol méd et chir* 1917 xviii:77

In the case reported the kidney was slightly enlarged and painful. It was not movable but was located a little lower than normal. Enervation by Papin's method and fixation after partial decapsulation were performed and the pain ceased.

Two years and nine months later the patient was still free from renal symptoms. The function of the kidney was found to be approximately the same as before the operation.

MARION and ORAISEN who discussed the case are of the opinion that the fixation was mainly responsible for the cessation of the pain.

FLORENCE CARPENTER

Dargatz M R. Recurrent Pyelonephritis in a Patient Operated upon for Renal Ptosis—Bifid Ureter. (*Pyélonéphrite à répétition chez une malade opérée pour ptose rénale urètre bifide.*) *J d urol méd et chir* 1927 xviii:74

In the case of a 40 year old woman who had under gone fixation of the right kidney five years previously, pyelocopy showed normal functioning of both kidneys but revealed also a bifid ureter on the right side. The two branches of the ureter joined a few centimeters above their entrance into the bladder. Apparently although this was not directly observable they were fused at their origin or both came from the same pelvis.

This case shows that it is possible for a ptotic kidney already in a state of advance distention to regain its normal function as the result of fixation.

FLORENCE CARPENTER

Takahashi A. The Health of a Patient 20 Years After the Removal of a Tuberculous Kidney. (*Rapport sur l'état de santé d'une malade à qui fut pratiquée 15 ans auparavant l'ablation d'un rein tuberculeux.*) *J d urol méd et chir* 1917 xviii:347

A woman now 48 years of age had her right kidney removed for tuberculosis in 1904 when she was 26 years old. In 1919 15 years after the operation she had kidney symptoms but they were found to be due to pregnancy and at term she gave birth to a healthy child. She bore 4 children before the operation and 6 afterward and is now in normal health.

AUDREY G MORGAN M D

Hunt V C. Papillary Epithelioma of the Renal Pelvis. *J Urol* 1927 xviii:5

Papillary epithelioma of the renal pelvis is the least malignant of all malignant lesions of the kidney. It is relatively uncommon the parenchyma of the kidney being the usual site of tumors. In a series of 318 malignant tumors removed by nephrectomy at the Mayo Clinic there were 3 primary epithelioma of the renal pelvis. Eight were sessile and 15 were papillary.

The sessile and papillary types differ in their microscopic characteristics degree of malignancy and manner of growth and extension. On the basis of clinical results and the grade of malignancy according to Broder's classification the sessile epithelioma is highly malignant as compared with the papillary epithelioma. The sessile epithelioma progresses and extends by invasion into the perirenal tissues the renal vein etc and metastasizes remotely while the papillary type progresses by extension along the mucous membrane of the calyces ureter and bladder.

Hematuria is the most common sign. A palpable enlargement of the kidney is usually dependent upon the presence of hydronephrosis. The discovery on cystoscopic examination of a papillary tumor of the bladder at or near the ureteral orifice should immediately give the clue to the diagnosis. The pyelogram usually establishes the diagnosis of renal tumor and sometimes that of papillary epithelioma.

Unless the bladder is involved the surgical procedures in the past have usually been limited to nephrectomy often with partial and occasionally with complete ureterectomy. However because of the high incidence of metastasis to the portion of the bladder immediately surrounding or adjacent to the ureteral orifice it appears that segmental resection of the portion of the bladder including the intramural portion of the ureter and the adjacent area must be done simultaneously with nephro-ureterectomy to insure the best prognosis. The technique of this 1 stage operation is described.

Quinby W C Pl c Surgery of the Renal Pelvis J I M I 97 11 84

In a large number of cases of renal stasis with the production of hydronephrosis due to obstruction at or near the renal pelvis Quinby has attempted to save the kidney by conservative surgery trying to produce drainage by some plastic procedure on the ureter and pelvis.

From the study of 13 cases he has come to the conclusion that the only procedure which gives permanent relief is the one in which the ureter is transplanted into the most dependent part of the pelvis. His attempt to enlarge the normal ureteropelvic junction by transverse suture of the longitudinal muscles was not met with success. In none of his cases has simple division of the obstructing artery cured the condition although the artery was considered the cause of the faulty drainage.

ELMER H. SMITH MD

André P. Bilateral Ureterotomy for Calculus in a Young Child (Littell J. M. B. 1914) 11 34

Andre reported the case of a child on whom a right ureterotomy had been performed in 1906 for a stone the size of a bean in the pelvic port on of the ureter. The child recovered from the operation but the urinary symptoms persisted and in 1917 about eleven months later the child showed a stone in almost a symmetrical location on the left side. At operation the left ureter was found markedly dilated and a stone measuring by 12 mm was removed. The stone consisted of a nucleus of calcium oxalate surrounded by calcium phosphate. The child made a normal recovery.

The author concluded that both stones had been present at the time of the first operation since on re-examination of the first roentgenogram a shadow of slight density was noted at the site of the second stone.

MICHAEL L. MASON MD

BLADDER URETHRA AND PENIS

Pitt T. The Etiogenic Action of Staphylococci by the Pus-forming Factor of Ammonium Magnesium Phosphate in the Urine (Dittl 1914) 11 34

Littell has found that the rule that staphylococci are killed by filtered aseptic urine and the urine is then kept in incubation at a temperature of 37 degrees C. it becomes alkaline and numerous crystals of ammonium magnesium phosphate are precipitated. Colon bacilli on the other hand prevent or greatly retard the precipitation of phosphates and keep the urine clear for a long time. In normal filtered urine that is kept aseptic no crystals of any sort were found in an observation period of several months. It therefore appears very probable that bacteria play a part in the production of

crystalline sediments in urine. The crystal may represent the products of microbial digestion.

The clinical and laboratory research that led to and confirmed these observations are described and the formation of the crystal is discussed at length.

In examination of the urine of a patient in whom a calculus of the urinary tract is suspected ammonogenic bacteria with lithogenic power—the most common of which is the staphylococcus—should be looked for. If they are found fluoroscopy may be indicated.

These studies explain how a massive but ephemeral infection of otherwise normal urine may be the origin of phosphatic calculi in childhood and adolescence. They explain also phosphatic gravel deposits of phosphates around a uric acid or oxalic acid nucleus and the rapid recurrence of certain phosphatic calculi.

FLORENCE CARPENTER

Papin E. and Michon E. Iliac Ureterostomy of the Remaining Kidney in Tuberculosis of the Bladder After Nephrectomy (Delorme 1914) 11 34

Papin's technique for iliac ureterostomy is described in detail. The most original features are the very extensive liberation of the ureter, the low section near the bladder and the omission of fixation of the ureteral aperture to the skin. A regular elongated curve takes the place of the sharp angle which is produced when the ureter is made to open in the lumbar region.

Thirteen cases are reported in which the operation was performed for the relief of intense pain of severe cystitis which persisted after nephrectomy for tuberculosis of the kidney. The patient first subjected to this operation was operated upon 6 years ago and is now leading an active life. In all of the cases in which the operation was performed long enough ago to warrant a conclusion as to the end result it was successful and in the cases recently operated upon it appears to have been successful.

The use of an apparatus to collect the escaping urine is much more convenient after this procedure than after lumbar nephrostomy. A short catheter in the ureter is unnecessary. Recently Papin has modified his technique by making a rectilinear skin incision to obtain a skin flap which he wraps around the exteriorized portion of the ureter. In this way he forms a tube similar to that made by Lambert for an anal anus. The tube allows the use of a more simple form of apparatus but in the one case in which it has been tried it gave rise to complications of cicatrization.

FLORENCE CARPENTER

T. K. Haslam A. The Early Diagnosis of Pedicled Villous Cancer of the Bladder (C. 1914) 11 34

It is difficult to make a diagnosis between benign and malignant tumor of the bladder particularly

in cases of the pedicled villous forms which are frequently benign. In the case of a man 60 years of age the first cystoscopic examination revealed a tumor which appeared to be a typical pedicled papilloma but the second cystoscopic examination made a few days later preliminary to electrocoagulation showed a slight bullous oedema of the mucous membrane around the base of the pedicle such as is often seen in cancer of the bladder. The author therefore decided to remove the tumor. After opening the bladder he was unable to see or feel any change in the mucous membrane and was inclined to doubt his cystoscopic diagnosis but microscopic examination showed cancerous infiltration both in the pedicle of the tumor and in the bladder mucous membrane.

Takahashi therefore advises careful inspection on cystoscopic examination of bladder tumors to determine whether there is any bullous oedema around the base of the pedicle. **AUDREY G. MORGAN, M.D.**

Morson A. C. The Treatment of Vesical Carcinoma by Radium Irradiation. *Brit. J. R. & O.* 927 xx 1 309

Morson discusses only inoperable cases of carcinoma of the bladder. When partial cystectomy is done by an expert it gives excellent results but when the lesion is too extensive for partial cystectomy a decision must be made as to whether a complete cystectomy shall be performed or irradiation employed. Radium irradiation does not cure bladder carcinoma but is followed by shrinkage of the tumor and temporary improvement in the general health. It will also control hemorrhage.

Four different methods of applying radium to bladder tumors are: (1) surface application (2) internal application (3) combined surface and internal application and (4) burying of the radium in the growth.

Surface applications are open to the objection that they cause the most intense irradiation upon the skin and the least intense irradiation on the tumor, considerable normal tissue intervening.

Internal application may be accomplished through a suprapubic cystotomy or through the urethra. At least a 4 hour exposure is required to destroy malignant cells. Through the urethra radium may be placed in the bladder by means of an operating cystoscope. Considerable normal tissue is heavily irradiated by either of the internal methods.

By combined application is meant the insertion of radium into the rectum and its application to the skin over the suprapubic region. This method is far from satisfactory.

The burying of radium in the tumor in the form of tiny glass tubes or radium seeds offers many possibilities but has several objections. The author deplores the haphazard method of applying radium tubes to a tumor in the bladder and the administration of sublethal doses. He believes that the 60 mgm. of radium available is inadequate for the treatment of a growth invading one half of the

bladder. He buries 10 mgm. tubes 1 in or less apart about the periphery of the lesion and leaves them in place for 24 hours. A marked reaction follows but complete disappearance of the tumor has not been realized. In general the improvement is only temporary but in the author's opinion the treatment is well worth while.

A. JAMES LARKIN, M.D.

Chauvin E. Double Urethra. Particularly the Posterior Varieties. (*à propos des uretères doubles en partie liés de leur trajet s. postérieure*) *J. d'Urol. Nécl. & Cl.* 19 xx 1 89

Le Fort made an excellent classification of anomalies of the urethra in 1896 but he studied chiefly duplications of the anterior urethra and forms unknown to him have been found with the progress of surgery. Chauvin therefore suggests a revision of the classification and divides such conditions into 4 groups: (1) complete double urethra (2) juxta urethral culs de sac (3) bifurcations of the urethra and (4) diverticula of the urethra with a distinct canal.

He has been able to find only 6 cases of complete double urethra in the literature. Sometime it is difficult to distinguish the normal from the accessory canal but the former usually has a normal sphincter while the latter is a simple fistula from which urine drains constantly. Sometimes the accessory canals are too small to be catheterized but histological examination always shows them to be lined with stratified epithelium like the normal urethra.

The culs de sac are blind at one end and open on the skin or into the bladder at the other. Culs de sac opening into the bladder are very rare; the author has found only 1 case in the literature. Those opening on the skin are much more common; they may run beside the normal urethra or above or below it. The dorsal ones are the most common. Le Fort collected 13 cases; Lebrun added 8 and the author has found 1 others in the literature and has seen 1 in his own practice. He describes the finding in his case in detail with a roentgenogram.

Posterior bifurcations of the urethra are difficult to demonstrate and so far as Chauvin is aware have never been diagnosed clinically. Le Fort did not know anything about them and only 1 case has been reported in the literature. In a case seen by the author the anomaly was discovered in a prostate that had been removed surgically; there was a urethra running through each of the lateral lobes. Anterior bifurcations are more common and may be lateral superior or inferior.

If a diverticulum of the urethra is to be classified as a double urethra it must not be simply a saccular dilatation but must present a distinct canal. It may be blind at one end and open into the urethra at the other or it may open into the urethra in the middle and be blind at both ends. The author reports a case in which histological examination of both culs de sac showed epithelium like that of the normal urethra. **AUDREY G. MORGAN, M.D.**

Nicholson B B Urethral Diverticula J U I
97 4

Urethral diverticula are rare. They sometimes cause marked listlessness and in several reported cases were responsible for death. The author reports two cases and supplements his article with a very complete bibliography of the subject. He states that many reported cases of congenital diverticula of the urethra lack proof of their congenital origin.

Diverticula may occur at any point along the urethra. Embryological evidence supports the theory that congenital diverticula are of entodermal origin. As a rule they are called to the physician's attention before the patient reaches adult life.

The diagnosis usually is difficult. Frequently the most evident sign is the appearance of a tumor discharging urine and it usually collapses after spontaneous or under internal pressure. If the tumor is through the skin foul urine may be expressed from the urethra as well as from the diverticula. In cases in which the urethral orifice is hard may be palpated and occasionally cystitis may be elicited. Intravesical opaque solution will usually outline the diverticulum and indicate its shape and capacity.

The treatment must aim at the sterilization and if possible the surgical eradication of the cavity. The smaller pocket may be cleared of infection by massage irrigation and dilatations and urethral dilatation especially when the cystitis stagnation of urine the larger diverticula must be completely dissected and excised.

J S H S L T M D

GENITAL ORGANS

C. G. A. G. Prostectomy in the Treatment of Urinary Retention in the Cow of Aute G. N. H. L. P. O. T. I. T. I. P. T. T. M. M. M. T. T. M. T. D. T. T. I. I. D. P. T. T. I. G. G. Q. J. D. I. D. I. I.
97 59

The author reports the case of a man, 45 years of age who had had gonorrheal urethritis for about three months and urinary retention for three days. Careful catheterization was done for a week with no relief.

A perineal prostatectomy was finally performed. The two lobes were incised and drained and a retention catheter was inserted. Four days after the operation the patient voided spontaneously, the temperature dropped and there was complete relief of the symptoms.

Three other similar cases have been treated in this manner by the author.

The treatment of chronic prostatitis is a matter of controversy. In the author's opinion it will often prevent the development of chronic urethritis and chronic prostatitis.

MICHAEL L. M. O. M. D.

Wildbolz H. The Indication and Execution of Prostatectomy. Proc. Roy. Soc. Med. Lond.
1917 88

The general indications for operation for benign hypertrophy of the prostate which are recognized by all surgeons are:

1. Permanent retention of a considerable quantity (50 to 200 ccm.) of urine in the bladder.
2. Frequent attacks of complete retention.
3. Long standing infection of the bladder.
4. Severe repeated hemorrhage from the hypertrophied prostate.

Many surgeons are extending the indications for prostatectomy operation when the frequency is only a slight degree of retention. In the author's opinion prostatectomy is not advisable as a prophylactic procedure. It is indicated only when the patient is in danger from the disease.

In the early days the mortality following operation was high because of uremia from impairment of renal function. It is later generally recognized that renal function should be tested before operation. However there is still a considerable difference of opinion as to which tests of renal function are best and as to when this function is sufficient to permit prostatectomy without undue risk.

In a series of 135 operatively treated cases Wildbolz tested the renal function before the operation by (1) testing the power of the kidneys to dilute and concentrate the urine (the water test), (2) the phenolsulphonephthalein test and (3) estimation of the blood urea.

These tests were repeated several times in each case to determine the importance of any resulting change from the preliminary treatment. One patient died of uremia after the operation. In the case of another who died of pneumonia and acute bilateral pyelonephritis there were no signs of uremia for 3 weeks but a few days before death the blood urea rose to 2 mm. In none of the other cases was the operation followed by uremia.

The water test is considered by many urologists to be the most important test of renal function. Suter of Basle refused to operate unless the urine is concentrated to a specific gravity of 1.07. Lehmann considers a specific gravity of 1.018 and R. Brühl a specific gravity of 1.05 to be the minimum. According to the author these figures are unnecessarily high as in 6 of his cases recovery resulted when the concentration was much lower. In 18 the specific gravity was between 1.011 and 1.06 in 7 it was 1.0 and in 1 it was 1.009.

Some surgeons attribute more importance to the difference between the highest and lowest figures for the specific gravity as determined by the test solution of from 15 to 20 degrees Fahrenheit side effect is necessary for safety. Of the patients whose cases are reviewed here 15 of 15 of a much lower concentration. Several showed a difference of only 4 or 5 degrees and a difference of only 3 degrees.

A poor response to the water test is not an absolute contraindication to operation. It is a suggestion only.

impairment of renal function. The author has never seen a poor result from the phenolsulphonephthalein test when the water test was good. In only a few cases in which the water test was satisfactory was the blood urea high.

A good response to the phenolsulphonephthalein test indicates good renal function but a poor response is not a definite contra indication to operation. Some urologists insist upon a minimal elimination of from 42 to 55 per cent during the first hour but Wildbolz believes this is too high. In the majority of his cases more than 30 per cent was eliminated in the first hour but in 13 the elimination was between 20 and 30 per cent and in 10 it was less than 10 per cent. Most of these cases showed a remarkably good elimination during the second hour. Wildbolz concludes that an elimination of less than 10 per cent during the first hour is a contra indication to prostatectomy but when there is an elimination of from 10 to 20 per cent operation is permissible provided the elimination is as high or higher during the second hour.

The estimation of the blood urea should be done to supplement the other tests. When the water and phenolsulphonephthalein tests are satisfactory operation is permissible but when they are unsatisfactory they leave us uncertain. The estimation of the blood urea shows when operation is definitely contra indicated but leaves us uncertain as to when it is permissible. A high blood urea determination is a contra indication to prostatectomy but a normal amount of urea in the blood is no proof of satisfactory kidney function. Several observers have seen patients with a normal blood urea value develop symptoms of uremia after prostatectomy. Wildbolz has seen patients with a blood urea value of from 30 to 40 mgm eliminating phenolsulphonephthalein very poorly and with such a small power of urine concentration that prostatectomy appeared too dangerous. He believes that the estimation of the blood urea will indicate only a serious deficiency of renal function and does so later than the water and phenolsulphonephthalein tests. On the other hand an abnormally high blood urea value is a certain indication that renal function is for the time too poor to permit operation. Uremia will surely follow operation when the blood urea is 100 mgm and will probably follow it when the blood urea is 80 mgm. When the blood urea is between 50 and 80 mgm operation is permissible only when the other tests are favorable. These observations indicate the necessity of employing more than one test of renal function.

Renal function may be rapidly improved by regular drainage of the bladder. As shown by Kornitzer, Hinman and Morrison deficiency of renal function is due not so much to atrophy of the renal parenchyma from back pressure as to disturbances in the circulation of the kidneys. Most patients respond promptly to preoperative treatment. In a few cases however no such response occurs and operation is not permissible.

When the response to renal function tests is not so poor as to contra indicate operation but improvement under drainage is not satisfactory operation may be performed if the general condition is good. If the condition of the heart and lungs is not satisfactory operation is not advisable. In deciding whether or not to operate it is important to ascertain whether a perineal operation may not be performed instead of a suprapubic operation.

Wildbolz believes that the perineal operation places less strain on the heart and lungs. He has found that the suprapubic operation is usually followed by an increase in the blood urea lasting several days while the perineal prostatectomy is followed by only a slight or no increase. In more than 50 per cent of cases in which a suprapubic operation was performed there was an increase in the blood urea on the fourth or fifth day. In the majority it amounted to from 60 to 100 mgm but in 1 case it was more than 100 mgm. In only 18 per cent of the cases treated by the perineal operation was there an increase and in these it was trifling. In 28 per cent of the cases of perineal operation there was a decrease on the fourth or fifth day after the operation. This difference is explained by the fact that in perineal operations there is much less disturbance of the general vascular circulation, less bleeding and less necrosis of the tissues. The wound does not hinder respiration or expectoration and as the wound is well drained there is only a slight amount of absorption to increase the blood urea.

In the author's technique for perineal prostatectomy approach to the prostate is gained by the usual incision and blunt dissection and the prostate is pressed downward into the wound by a metal catheter in the urethra. The fascia of Denonvilliers is then incised transversely just above the apex of the gland and pushed backward to expose the posterior surface of the capsule. The latter is incised by a midline vertical incision beginning 1 cm above the apex and through this incision both lobes of the prostate are enucleated as far as possible. The prostatic urethra is divided transversely just at the lower end of the adenomatous mass the upper end being left connected with the neck of the bladder. Young's retractor is then introduced and the upper end of the urethra is divided close to the neck of the bladder together with any adhesions between the adenomatous mass and its capsule.

Four sutures are placed through the neck of the bladder and the stump of the urethra at the apex of the gland. The ureters are tied over an indwelling silk catheter which is left in place for from 12 to 14 days. The sutures restore the normal anatomical conditions so far as possible. A drainage tube is placed in the prostatic capsule. No packing is used. The superficial wound is closed with a few sutures.

Healing usually occurs by primary intention. The drainage tube is removed after 3 or 4 days. After the removal of the catheter the patient voids normally.

In 103 cases treated by suprapubic prostatectomy the mortality was 15 per cent whereas in 305

treated by perineal prostatectomy it was 6.5 per cent

Disadvantages of the perineal operation are wounding of the rectum and the risk of incontinence

HARRY A. F. WILKINSON, M.D.

THE PROSTATECTOMY—Some Remarks About the Indication, Technique and Results

The author reports his experience in 93 cases of prostatectomy with a postoperative mortality of 5.4 per cent—8 cases of benign prostatic hyperplasia and 11 cases of cancer. The mortality was 4.0 per cent and 11 cases of cancer. The prostatectomy with a mortality of 9 per cent.

To obtain good results from prostatectomy careful preoperative treatment is necessary. Of chief importance is permanent drainage of the bladder. A catheter is inserted by means of the external catheter. The effect of drainage will be carefully controlled by the catheter. According to the Strauss method and determination of the non-protein nitrogen of the blood. The latter is necessary for a correct estimation of the functional capacity of the kidney. A rule is a good result from operation can be expected if the non-protein nitrogen of the blood does not exceed 40 mgm. On account of the fairly common variability of the renal function in patients with the conditions repeated determination will be made before the operation and when the prognosis is uncertain the patient should be kept on an alkaline bicarbonate diet for the first few days after the operation.

The result is improved if the operation is performed in the supine position. When the non-protein nitrogen content of the blood is persistently high and there is considerable infection a preliminary cystostomy should be done to obtain more effective drainage of the bladder and greater improvement in the renal function. This is the result from the use of the retention catheter.

The occurrence of postoperative epididymitis can be greatly eliminated by changing the catheter every other day during the treatment before and after operation.

In cases of benign hyperplasia of the prostate prostatectomy usually gives a lasting result. In cancer of the prostate in which the diagnosis may be very difficult, non-metastatic cancer of the prostate as regards definition is evident after prostatectomy by the histological and cytological results. Very unfavorable recurrence and metastases sometimes develop within 6 months after the operation, but in some cases several years may elapse before such complications arise. The patient being quite free from symptoms in the interval. The occurrence of postoperative multiple metastases in the bone especially in the vertebral column by no means is rare. Such metastases often grow very slowly however and appear to be favorably influenced by repeated treatments with the roentgen rays.

Hydrocele in Egypt. L. 1921. 927. CCV. 72

Cellulitis of the spermatic cord has long been recognized as a fairly common affection in the East. It has been described in Egypt and Ceylon. Castellani studied the condition and gave it the name of endemic funiculitis. At Kasr el Ainy hospital during the year 1921 to 1924 105 patients with the condition were admitted and about twice this number were treated as outpatients. These figures represent only a small percentage of the total incidence of the condition because they include only cases of the most severe type.

The disease is observed most often in April, May and June, but may occur at any time of the year. It is most common between the fifteenth and thirtieth years of age. It is usually unilateral but may affect both sides simultaneously. The attacks usually recur at variable intervals. In Castellani's opinion it is a filarial disease with a superadded streptococcal infection.

There are 3 major varieties—the gangrenous, the suppurative and the non-suppurative.

The non-suppurative type which is much more common than the suppurative appears in a mild and a severe form. It has long been described as thrombosis of the spermatic cord.

The gangrenous type which is the rarest causes death usually in 2 or 3 days with marked symptoms of septicæmia. Death occurs in spite of early interference.

The cutaneous supplicative form offers a somewhat better prognosis if promptly treated, but often causes death. Abscess formation especially in the knee joint is a common complication. A diplo-streptococcus is isolated in every case.

Hydrocele is an almost constant sequel of the milder cases and in the author's opinion almost all of the very numerous cases of hydrocele observed in Egypt are due to this condition.

There is a great similarity between funiculitis and the attacks of lymphangitis occurring in tropical elephantiasis. The underlying cause is probably a filarial and the exciting cause a streptococcus.

JOSEPH S. EISENSTADT, M.D.

Stricker, P. and Frank, A. Multiple Fibromata of the Tunic Vaginal (F) in Multiple Diverticula. J. d. l. d. i. l. 97.

53

Stricker and Frank report a case of fibromata of the tunica vaginalis in a 4-year-old man. The first tumor was noticed by the patient two years previously. There was no other abnormality in the genital region.

At operation five small tumors, round and very hard, were found adherent to the peritoneal and parietal layers. Almost all of the tunica vaginalis was removed with the tumors. The other growths the size of the head of a pin were excised in the same manner and destroyed with the thermocautery.

Histological examination showed the tumors to be fibromatous formations very much sclerosed

The authors have been unable to find a similar case in the literature

FLORENCE CARPENTER

Wesson M B Backache Due to Seminal Vesiculitis and Prostatitis *California & West Med* 1927 xiv 346

Wesson says that in a large percentage of cases of low backache there is an infection of the prostate and seminal vesicles and as soon as free drainage is established the backache ceases

He emphasizes the fact that although the primary infection in such cases is in the prostate it is the secondarily infected seminal vesicles which are responsible for the metastatic infection

Disease of the prostate or seminal vesicles causes backache through referred pains or by metastatic infection with resultant local fibrosis or arthritis in the lumbosacral spine As this causes the patient to assume an attitude which increases the strain on the back muscles the static element is often directly responsible for the pain in the muscles and ligaments

In backache due to disease of the seminal vesicles the pain is made worse by pressure on the structures at fault but movements of the back are not limited until the development of arthritis Particularly important in the lower back is the presence or absence of tenderness on pressure in the area of pain

In cases of long standing infections which are sealed in several treatments are necessary to break down the barriers and release the pus and bacteria

Four cases are reported

LOTIS GROSS M D

Walker K M The Treatment of Genital Tuberculosis in the Male *La C* 1927 cxvii 367

Walker emphasizes that genital tuberculosis is to be regarded as a local manifestation of a general condition requiring the adoption of all general and local measures known to be of value in rousing resistance against infection by the tubercle bacillus

In its surgical treatment epididymectomy is the operation most generally of value Vesiculectomy although based on a correct understanding of the pathology of the disease is rarely necessary as removal of the lesions in the testicles is usually followed by marked regression of those in the prostate and vesicles This regression is materially assisted if epididymectomy is supplemented by climatic and dietetic treatment heliotherapy X ray irradiation and the use of tuberculin If no improvement in the central lesions occurs vesiculectomy and the removal of grossly infected tissue in the prostate should be done as a secondary measure

In advanced cases of tuberculous vesiculitis and prostatitis and those with fistulous tracts the radical operation should be performed as a primary measure It may be carried out also in a few cases of less advanced disease when the patient's mode of life and environment are so unfavorable that he is severely handicapped in the fight against tuberculosis

C TRAVERS STEPHEN M D

MISCELLANEOUS

Barbellion I The Latent Gonococcus and Spermculture (Gonococque latent et spermo culture) *J d urol méd et chir* 1927 xxiv 36

In Barbellion's opinion spermculture is an indispensable complement to the older methods of deciding the question of cure of gonorrhoea It is not however an absolute criterion and the difference in the results obtained by different investigators (Janet Debaines a positive result in none of his cultures and Maille a positive culture in 94 per cent) indicate the difficulties experienced in its application

In 1923 Barbellion obtained a positive result in from 50 to 60 per cent of his cultures whereas in his latest research with a different medium he obtained a positive result in only 4 per cent He believes that the organisms seen in the previous investigation were not gonococci He does not accept the theory that the gonococci found in the sperm of a high percentage of clinically cured cases are gonococci of a special attenuated saprophytic type

Examination of the fresh sperm between slide and cover glass gives information as to the presence number and vitality of spermatozoa and the presence of leucocytes and bacteria Further information is obtained from an examination of the sperm spread thinly fixed and stained with Gram's stain The presence of pus in the seminal fluid is a sign of prime importance even in the absence of gonococci It is very important to search for the gonococci in the fresh sperm as well as to make cultures

FLORENCE CARPENTER

Lambkin E C and Dimond L The Employment of Polar Body Developing Strains of the Gonococcus in the Treatment of Gonococcal Infection *Brit M J* 1927 i 30

The objectives in the treatment of gonorrhoea are the following

1 To raise the immunity of the mucosa through which the organism enters the body

2 To increase the resistance of the particular glands and organs susceptible to attack by the gonococcus

3 To raise the antibacterial properties of the blood and tissue fluids in order to reduce the risk of systemic spread of the infection

4 To bring the patient under certain precise biochemical and colloidochemical conditions which have been found to give optimum results as regards defense against the invading organism and to place the infecting organism under conditions in which it is least able to withstand the defense mechanism of the body

5 To provide a means of determining whether any local foci of the disease remain or whether the patient is completely freed from the infecting organism—in short to obtain a test of cure

These objectives have been sought by (1) drainage of the whole urethra by mild irrigating fluid

() maintenance of the urine reaction at a pH of 7.2 to 7.4 (3) intra urethral instillation of a product of gonococcus metabolism the exotoxin (4) the parenteral administration of the exotoxin and (5) the instillation into the urethra of another gonococcus product called endotoxin. The methods have not yet been perfected.

Golar bodies which have been obtained in 33 per cent of all gonococcal strains have been found to develop also in a certain percentage of strains of every organism investigated up to the present time provided the necessary elements for their formation are present in the culture medium and the physical conditions required for their development are maintained.

C. TRAVER STEPHEN, M.D.

Botsford, M. E., Riggett, E. and Johnson, C. M.
Anæsthesia in Urological Surgery. C. I. f.
 & H. I. M. d. 9. 3.

The choice of anæsthetic in urological surgery is a matter of concern to the urologist, surgeon and anæsthetist and has been the subject of much discussion and investigation in the past few years. The inhibitory effect of ether and chloroform on kidney function is well established. Consequently, attribution to reduction of the blood pressure and impairment of aeration of the blood.

In selected urological cases local anæsthesia is ideal but for the large majority in which general anæsthesia is necessary, nitrous oxide best meets the requirements of urological surgery. Unlike ether and chloroform nitrous oxide has no effect upon the blood pressure other than to cause a rise during secondary saturation when the oxygen pressure is

reduced and as it is not eliminated by the kidneys it has come to be regarded in most urological clinics as the anæsthetic of choice when a general anæsthetic is indicated.

Because of the supposed retardation of urinary excretion produced by morphine and atropine, the latter are generally omitted in cystoscopic examinations and ureteral catheterizations under nitrous oxide anæsthesia but from experiments on dogs Haines and Milliken concluded that in the usual hypodermic doses they do not affect the kidney function unfavorably and even prevent the inhibition produced by ether. The investigation reported in this article was undertaken to determine whether nitrous oxide anæsthesia inhibits kidney function and if so whether morphine and atropine prevent this inhibition as they do when ether is used.

Cystoscopic examinations of adults are usually done under some form of local anæsthesia but in these procedures also the preliminary administration of morphine would be of great value for its preoperative psychic effect and for postoperative relief of pain.

In nitrous oxide anæsthesia morphine frequently the factor which determines the possibility of obtaining muscular relaxation. The author therefore concludes that if as Haines and Milliken suggest it does not interfere with elimination in urological operations such as perineal and suprapubic prostatectomies, nephrectomies and operations on the bladder as well as cystoscopic examinations and ureteral catheterization may be done under nitrous oxide anæsthesia without the addition of ether.

L. L. G. S. M.D.

SURGERY OF THE BONES, JOINTS, MUSCLES, TENDONS

CONDITIONS OF THE BONES JOINTS MUSCLES TENDONS ETC

Syamore L K and Holmes G W Endothelial
Myeloma (Ewing's Tumor) *J R ntg* 1
19 7 VIII 2 3

The course clinical incidence prognosis morphology and response to irradiation of Ewing's tumor are sufficiently characteristic to make endothelial myeloma a clinical and pathological entity. The rarity of its recorded occurrence is probably due to failure of diagnosis. According to available statistics it constitutes approximately 10 per cent of bone tumors. It metastasizes readily to other bones thus probably accounting for the fact that it is sometimes considered a condition of multiple primary tumors.

The clinical picture is characterized by localized intermittent pain and swelling and local heat without redness. Sometimes there is slight tenderness and occasionally pulsation is noted. There may be slight fever and a slight leucocytosis. The roentgenographic picture is that of a purely destructive non osteogenic process in the bone. The tumor usually involves over one half of the shaft extending from the center toward the ends. There may be periosteal reaction leading to new bone formation. This usually occurs parallel with the shaft but occasionally in radiating spicules. The tumor may invade the periosteum and surrounding soft parts.

It must be differentiated from osteogenic sarcoma metastatic malignancy multiple myeloma and osteomyelitis. The differential points of these lesions are discussed at some length. In doubtful cases a course may be had to biopsy or to the therapeutic test of irradiation. As biopsy increases the danger of metastasis and the response to irradiation is rapid and specific the latter is better.

Irradiation is the treatment of choice. Its action is so marked that failure of a tumor to react favorably is sufficient evidence that the growth does not belong in the category of Ewing's tumor. The treatment must be continued over a long period as the growth tends to recur. No definite statement can be made as yet with regard to the curative value of radiation since only a few cases have been treated by this method alone and these were treated too recently to justify conclusions as to the permanence of the cure.

The use of surgery and Coley's serum is discussed briefly.

The prognosis of the condition is unfavorable although considerably better than that of osteogenic sarcoma or multiple myelitis.

A case seen by the author is reported in detail
ABRAHAM HARTUNG M D

Rowlands M J Rheumatoid Arthritis Is It a
Deficiency Disease? *P o K J Soc M d Lond*
1927 XX 17 1

In investigations with regard to the effect of diet on rheumatoid arthritis Rowlands found that when pigs with stiffness and swelling of the joints were fed on a full vitamin diet they became entirely normal.

Early clinical observations had led him to the conclusion that rheumatoid arthritis is of trophic origin. This was suggested by the typical areas of hyperaesthesia and the marked wasting of specific muscle such as the vastus internus the nerve of which supplies the knee joint and the deltoid in which the circumflex nerve is involved. Over a long period of observation he noted that in a very high percentage of the cases cultures of the urine yielded bacillus coli. Of the last 100 cases studied bacillus coli were found in the urine in 50. Cultures of the fluid obtained by puncture of the joints were sterile.

The author studied also the effects of a deficient diet on rats. When a diet deficient in Vitamin B was given all of the animals appeared sick within 3 weeks and in the fourth week a number of them died. In controlled necropsies the most marked and constant findings indicated absence of the peristaltic wave general malnutrition and distention of the caecum. Colon bacilli could not be cultured from rats fed on the deficient diet for only 4 weeks but were found in the urine of those fed this diet for 9 weeks.

None of these animals died from acute septicemia or showed the least signs of being ill other than symptoms attributable to the deficiency in the diet.

These and other findings suggest that a deficiency of Vitamin B in the diet of animals lowers the vitality as indicated by the subnormal temperature and decreases the resistance to infection. The rats died of acute toxemia. In the author's opinion the absence of peristalsis was due to paresis of the nerve supply followed by atrophy of the muscle with consequent distention and the absorption of toxin. The track of infection is by way of the lymphatics.

In discussing the similarity of the effect of a deficiency of Vitamin B in the diet to a nerve disease the author calls attention to the fact that in animals fed on such a diet a constant symptom is paralysis. In rheumatoid arthritis a joint commonly involved is the knee. Before the pain becomes localized in the knee the patient usually complains of a tingling or numbness around the joint. Wasting of the vastus internus sets in and there are areas of marked hyperaesthesia above the knee joint and on the outer part of the leg. The vastus internus supplies the knee joint or at least its synovial membrane. There is no wasting of the rectus.

In rheumatoid arthritis of the shoulder joint the patient often complains of pain over the deltoid before there are any marked bony changes and sensitive area in the skin are found in the region supplied by the cutaneous branch of the circumflex nerve. The circumflex gives off a large branch to the joint as a trophic nerve.

In rheumatoid arthritis of the hand there is marked wasting of the interosseous muscles and of the thenar eminence which are supplied by the deep portion of the ulnar nerve. There is never any wasting of the hypothenar eminence. If the wasting were due to disuse all of the muscles would probably be equally involved.

The author draws the following conclusions:

1. The absence of any organism in the blood of the joints and the tissues indicates strongly that the disease is of toxic origin. The high percentage of cases (90 per cent) in which there is a bacilluria indicates strongly that the condition is due to bacterial products.

2. Rheumatoid arthritis may be accompanied by distention of the stomach and constipation.

3. The similarity in the anatomical changes in almost all cases is remarkable.

4. Injury is a predisposing cause determining which joint will be involved.

5. The disease is one of civilization and is increasing. The increase in its incidence is consistent with the changes in our diet.

In the author's experience a diet rich in concentrated content of Vitamin B has been effective in relieving rheumatic pains and sterilizing the urine.

Massage and electrical, thermal and drug treatments have proved of little value. Foci of infection should be removed as far as possible.

GERARD H. ELVID

Cahey E. J. The Anatomy, Physiology and Anomalies of the Spine. Rad. 1919, 9, 7-9.

The spine has two primary curves—the thoracic and the sacral—for the accommodation of the viscera. There are also two secondary curves—the cervical and the lumbar—which compensate for the upright posture. These curves render the spine sixteen times stronger than it would be if it were straight. They give it elasticity and maintain the weight of the viscera within the line of the center of gravity. The curve is so gradual that it prevents the possibility of compression of the cord and adds greatly to the beauty of the body outline.

The vertebrae are interlocked and overlap each other by the spinous and articular processes so that the cord is well protected and there is little danger of its location. The weight-bearing part of the vertebrae is especially built to sustain its load. The strong lamellae run vertically and are bound together by weaker horizontal lamellae. Both sets of fibers are curved with their convexity toward the center of the bone. Elasticity is afforded by the cancellous composition. The cancellous tissue is covered by a thin layer of compact bone. The cord

is attached to the vertebral bodies, the least movable parts of the spine.

Röntgenograms of the spine should be of decided clinical importance. Normal standards must be set up for the different anatomical ages. When this is done the roentgenologist will be able to report an increase or decrease of surface outline or density of bone in the various vertebrae.

The roentgen examination is a valuable method for recognition of the various abnormalities in spinal development that result from delayed growth or a perverted anatomical condition.

The spine may show absence of one or more vertebrae, an additional vertebra, retarded or accelerated growth of parts, or complete inhibition of parts of vertebrae. The most common anomalies of this type are spina bifida and fusion of vertebrae to contiguous bones. CHARLES H. HEACOCK, M.D.

SURGERY OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC.

Pratt M. The Importance of the Junctional Tendinum in Lesions of the Extensor Tendons of the Fingers (Sillimpo, Tardieu, Gutter, D'Arville, Loeb, Tendin, et al., 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 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3718, 37

Ryerson E W Laminectomy *J Am M Ass*
1927 LXXX 637

In Pott's disease laminectomy is indicated after conservative treatment by complete recumbency in bed on a Bradford frame has been given for about 6 months

In fracture dislocation of the spine with marked cord symptoms in which every hour of delay of treatment means increased harm to the cord an early decompression may give a chance for cure which otherwise would be lost In such cases laminectomy is a reasonably safe procedure and should be performed as a routine measure

Not only recent but also old cases of incomplete lesions of the cord due to injury may be greatly benefited by laminectomy

For cases of complete transverse destruction of the cord the author proposes to transplant several intercostal nerves downward into nerves below the lesion No attempt has been made to perform this operation as yet but Ryerson solicits opinions regarding the plan A J GOTTLIEB MD

Nove Josserand G and Pouzet F Late Results of Atypical Tarsectomies in Diffuse Tuberculosis of the Posterior Tarsus in Children (Résultats de la tarsectomie atypique dans la tuberculose diffuse du tarse postérieur chez l'enfant) *Lyon chir* 1927 XVI 19

In extensive tuberculosis of the posterior tarsus surgical treatment is necessary The authors have treated 40 cases The typical posterior tarsectomy was done in only 4 In the others they removed the astragalus and then curetted the calcaneum and the other bone of the tarsus so thoroughly that often they left only a shell of cortex and this only in areas that seemed normal In most of the cases a cure resulted

In 3 cases it was found necessary to remove the calcaneum secondarily and in 1 to perform a second curettage on that bone In addition to removal of the astragalus and curettage of the calcaneum which they did in all 45 cases in which the atypical operation was done they curetted the epiphysis of the tibia in 7 curetted or removed the scaphoid in 11 and 1 curetted or removed the cuboid in 9

On the whole the atypical posterior tarsectomy gave very good functional results Since as much as possible of the bones of the tarsus should be preserved curettage has the advantage over subperiosteal tarsectomy as it permits a considerable degree of regeneration and better preserves the surfaces of the joints particularly those of the calcaneocuboid joint Retrodisplacement of the tibia with reference to the calcaneum must be prevented and special care must be taken to preserve the scaphoid because of its importance as a support of the tibia If the scaphoid is diseased curettage is preferable to its removal If removal of the scaphoid is unavoidable it may be best to remove the cuboid also even when the latter is normal so that the tibia will rest on the anterior part of the foot

The foot must be put up in a position to assure this support This is best done by pulling it downward and backward AUDREY G MORGAN MD

Freiberg A H Physical Therapy and Its Relation to Orthopedic Surgery *J Am M Ass* 1927 LXXX 782

Freiberg calls attention to the present haphazard and inefficient use of physical therapy and suggests how it may be corrected

The advent of heat baths electrotherapeutic apparatus and various forms of light instruments has tended to divert attention from the older forms of physical therapy and to a more alarming degree has lessened expertness in the use of massage gymnastics and general physiological training

There is a constant tendency to substitute expertness for a confusion of apparatus Freiberg insists that physical therapy and apparatus therapy are not synonymous Most of the apparatus now employed is good and of value under the proper conditions but it is rare to find that those using them or prescribing their use have more than a superficial knowledge of the relationship of the physical therapeutic agent to be employed and the physiological and pathological changes to be treated

Some of the most important methods included in the term physiotherapy cannot be supplanted by the use of any of the apparatus now known

Courses of instruction given in mercantile establishments to increase the sale of certain types of apparatus are not acceptable substitutes for training in medical schools or hospitals either for the physician who is to direct the treatment or for those who are to act under his direction

None of the so called drugless cults is to be regarded as identical with physical therapy or as a substitute for it

It is important that the principles of physical therapy in its modern sense be a part of the education of the student of medicine The medical student should have at least a minimal amount of training in its application

A more numerous personnel thoroughly trained in the practical application of physical therapy in its various branches should be at the service of the medical profession

In discussing a personnel to perform the practical part of this work Freiberg suggests that the nurse is best qualified to select physical therapy as a field for postgraduate specialization

GEORGE C HENSEL MD

FRACTURES AND DISLOCATIONS

Kleinschmidt A New Method of Treating Pseudarthroses (Ein neuer Behandlungsweg der Pseudarthrose) *51 Tag d deutsch Ges f Chir Berl n* 1927

Besides general causes there are also local causes for the development of pseudarthroses To correct the latter in 3 cases the author exposed the pseudar-

thro is removed any possible local influences to cure freshened the wound and then performed an osteotomy upon the same bone at a distance. In this manner he obtained a wide contact surface for the fracture end. In 1 of the 3 cases the fracture produced by the osteotomy was not entirely healed though the pseudarthrosis as corrected. In the other cases both areas were healed completely.

In the discussion following this report EGGERS (Rostock) dealt with the operative treatment of subcapital fracture of the neck of the femur. He had reexamined 10 cases 6 of which had been operated upon in 93 and 1 in 94. In only 1 case was there a pseudarthrosis. In the others the operation was performed early. In 3 the neck of the femur was placed in the acetabulum and a fairly good result was obtained. One patient was able to walk for half an hour but was still unable to put any great weight on the leg. The other patients 70-year old women are able to attend to all of their household duties go up and down stairs and dress and undress themselves. In all of these cases the roentgenogram showed only atrophy of the femoral neck and in the formation of a new painless and functional joint between the remainder of the neck and the upper edge of the acetabulum. In 4 cases the shaft was placed in the acetabulum. In 1 case it slipped out again and the result was therefore poor. To prevent this in the 3 other cases the trochanter was chiseled off and affixed to the strongly abducting femur below its original site and in 2 cases the acetabulum was broadened by the formation of a ridge according to the method of Koenig. In the 2 cases the shaft remained in the acetabulum and the hip was capable of bearing weight. Motility was good in 3 cases and excellent in 1. Because of these results the method employed today consists only in the insertion of the shaft with possibly the addition of transplanted bone of the trochanter and the formation of a ridge.

Eggers also described briefly the Albee operation which gave good abduction a firm insertion of the shaft a negative Trendelenburg and 9 per cent of normal mobility.

According to the experience at the Rostock Clinic middle aged patients heal well in plaster cast. They are therefore treated conservatively. For older patients Eggers advocates early operation since by this means the period of treatment may be materially reduced.

DLUTSCHLAENDER (Hamburg) reported a successful operation which he performed 3 years ago according to the method of Koenig on an old pseudarthrosis in a 70-year old girl. He extirpated the head of the femur left one portion in the acetabulum and resected and inserted the greater trochanter.

DEJEL (Vienna) discussed the good results that may be obtained with Whitman's plaster cast. This cast must be worn for 6 months. Eventually the apparatus may be employed also. In the von Eiselberg Clinic every case is treated conservatively at

first. Operations are the exception (marked pseudarthrosis).

ANSCHUTZ (Kiel) stated that he also prefers to put off operating until conservative procedures have failed. The treatment of old persons is still unsettled. An operative method that is very well adapted to elderly persons is resection of the head of the femur and insertion of the neck. Still better is transplantation of the trochanter. After the latter operation some stiffness of the joint must be expected but the patient is able to walk fairly well.

VOELCKER (Halle) reported a successful operation on a pseudarthrosis of the neck of the femur in a young person. He did not remove the head entirely but used the remainder to form a new acetabulum in which he inserted a head constructed from the neck.

HEUSCHEN (Basel) stated that in 1 case he replaced the head of the femur with the head of the humerus which he implanted with the upper portion of the fibula. The result 8 years after the operation is good. The head and the acetabulum have accommodated themselves to each other. For several years he has permitted the patient to wear a Hepprath.

RAUSCH (Koenigsberg) discussed the fate of ivory implanted in the human body. Ivory has been used at the Koenigsberg Clinic for many years. Rausch's studies were made in experiments on animals in which he implanted ivory in both soft tissue and bone. In the soft tissue a layer of granulation tissue as formed around it and in the bone a narrow necrotic zone from which callus was formed later. A dog with an ivory implant in one extremity was able to stand on the leg after 5 days and after 7 days scarcely limped at all. The ivory does not begin to disappear from the body until after months or years. Rausch showed that by roentgenograms. Because of the hardness of the material it is impossible to follow the microscopic changes but experiments on animal and clinical experiences show that good healing and eventual replacement of the transplanted ivory in particular is suitable for use as a prosthesis.

KOENIG (Wuerzburg) also emphasized the use of ivory. It absorbs very slowly. It is particularly suitable for parts which will not be subjected to strain. Koenig has used it with success as a substitute for the lower end and as a substitute for the humerus in sarcoma. SEXTER (Z)

COTTON F. J. Art.ificial Impaction of the Femur. S. G. G. Ob. 1907, 137.

Cotton classifies the fractures of the hip as (1) extracapsular fractures not impacted (2) intracapsular fractures impacted either lightly or not at all and (3) epiphyseal separations. He does not discuss the third group.

In fractures of the first group bony union always results with usually a good prognosis if no articular surface is prevented. Cotton recommends for this class of case treatment by traction of from 6 to 15 lb with the leg in about 30 degrees of abduction for from 6 to 8

weeks. Walking may be allowed after from 10 to 12 weeks and return to work after from 18 to 20 weeks.

The intracapsular or high fractures of the neck of the femur are those which result in loose joints and for which artificial impaction is suggested. They are much more common in females than in males and usually occur in the aged as the result of lateral falls on the buttocks. Cotton has found that under the usual routine treatment only fractures impacted by the fall have good union. The others he treats as follows:

As soon as possible after the shock of the injury has subsided the patient is anesthetized and while one operator makes traction on the leg with the stockinged heel in the patient's crotch and another steadies the pelvis the leg is drawn down to the proper length abducted moderately and rotated inwardly. The surgeon then strikes the padded

trochanter several following blows with a heavy wooden mallet. Impaction results when the leg is felt to give and remains in position without rotating externally. A double plaster spica with a cross bar is then applied for from 10 to 12 weeks. This is followed by a Thomas caliper splint. When the X ray shows marked bone absorption diathermy is often beneficial. The length of time the ambulatory splint is worn is determined by bony union as checked with the X ray.

Poor or doubtful impactions are broken up and artificially reimpacted. If this is done and fixation is satisfactory bony union and a useful limb will usually be obtained. So far splicing followed by early motion has not been entirely successful but how its end results will compare with those of the described method of artificial impaction is as yet unknown.

CHESTER C. GUY, M.D.

The usual and most generally accepted procedure is excision after the course of the veins has been marked with dye. It is best to excise a considerable portion of the saphenous vein above the knee.

For cases with ulcers Smits advocates stretching or teasing of the internal saphenous external popliteal external saphenous or sciatic nerve. If the ulcer is large he either cures it or does an excision followed by skin grafting. Keller has described a method of obliterating the lumen of the varix with a continuous silk suture applied subcutaneously in order to prevent scar formation. Another method is the injection of the lumen with some substance that produces a thrombus which subsequently organizes. Douthwaite used this method for 2 years apparently with complete success. He injected a solution of quinine hydrochloride urethane and distilled water. Sodium salicylate mercury peroxide and other substances have been employed for the same purpose. CHESTER L. CREAN M.D.

Meisen V. Injection Treatment of Varicose Veins and Their Sequelæ on the Basis of 500 Treated Cases. *Acta Chir. g. Scand.* 19: 7, 1911.

The chief purpose of this article was to point out the close topographical relation between varice and their complications: ulcer cruris and eczema chronica cruris.

Five hundred patients received 24 injections. Three hundred and seventy of the patients were women. In 55 cases there was a history of phlebitis a condition of great importance in the prognosis. In 40 cases the varices were complicated by chronic eczema of from 1 to 10 years standing and in 135 cases with an ulcer of from 6 months to 40 years standing. In 53 cases the ulcer had persisted for less than a year in 57 cases for from 1 to 10 years in 13 for from 10 to 20 years in 8 for from 20 to 30 years and in 4 for from 30 to 40 years.

The principal indication for the treatment of ulcer is pain. In all of the cases reviewed except the ulcer was healed at the time the patient left the hospital. One of the 2 ulcers that were not healed at the time of the patient's discharge was on the back of the calf and the other was a small ulcer on the internal aspect of the foot. A temporary recurrence of the ulcer developed in only a few isolated cases.

Frequently varices are concealed by their complications. They become visible only when the edema and swelling have subsided or are found only on careful palpation with the patient in the standing position resting on the leg that is being examined.

The venous pressure was increased in the varices but no relation between the venous pressure and the extension of the complication was manifested.

The etiological importance of working in the standing position was evident from the patients' occupations and the extremely frequent coexistence of pes valgus.

In the 500 cases there were 14 recurrences after operation. In 150 additional cases there were 12 recurrences. The relapses indicate that the blood from the deeper veins was forced out through the anastomoses. Injection treatment is far superior to operative treatment because it obliterates the veins in which the blood is stagnating.

Experiments carried out on animals showed that cocci circulating in the blood do not infect the thrombi.

Necroses are milder complications occurring during the treatment. These may give rise to phlegmons. They may be avoided by careful technique. Besides 3 cases of phlegmons there were 11 cases of infarction after the injections of from 20 to 5 ccm (maximal dose per injection not to exceed 10 ccm) cases in which phlebitis developed and 1 case of hemorrhage. The incidence of complications was 1.6 per cent. The treatment caused no death or lasting disability.

During the last 4 months when a new technique and a new injection fluid were used there were no complications whatever.

In 35 cases of hemorrhoids the method gave excellent results but a small fissure developed in 2 cases and a small fistula in 1. The fistula was operated upon under novocain anesthesia.

Berntsen V. Varices of the Leg Especially from the Point of View of Etiology and Surgical Treatment. *Acta Chir. g. Scand.* 1927, Vol. 6.

The author discusses the etiology of varices and the results of their surgical treatment. The etiology has been studied by investigations on cadavers, clinical examinations of patients with varicose veins in different stages and microscopic examination of the walls of normal and varicose veins. The article is summarized as follows:

1. In agreement with the findings of earlier investigations the studies have confirmed (1) the importance of heredity, (2) the greater frequency of varices in women and (3) the occurrence of varices as a rule before the age of 30 years.

In the majority of cases varices are found in both legs.

3. Varices are of 4 types: (1) the isolated saccular varix, (2) the tortuous varix, (3) the solitary dilated and hypertrophied but otherwise normal piece of vein interposed between the true varices and (4) fine cutaneous dilations.

4. The different phases of Trendelenburg's phenomenon are elucidated. The signs used to designate them are: O + - + -.

5. In early varices Trendelenburg's phenomenon is O in insufficiency of the valves above in the vena saphena magna + in insufficiency of valves in the anastomotic branches to the deep veins - and in insufficiency in the valves in both places + -.

6. The inconstant localization of the varices has been verified by clinical examinations and by dissections of cadavers. The cause of the condition is to be looked for in the wall of the vein itself.

artery was completely obliterated the gangrene was less marked.

Histological examination of the vessels showed organized thromboses rather than endarteritis. Two stages were noted. In the first the vessels were obliterated but the walls were not changed and in the second the muscular and elastic tissues were being dissociated by the penetration of vascular connective tissue which connected the thrombus and the adventitia. The authors did not find the purulent foci of polynuclear and giant cells in the peripheral part of the thrombus which Buerger considers specific for his disease.

Histological examination of the suprarenal glands did not show anything definite and blood examination did not always show a marked change as a result of the suprarenalectomy. In 3 cases however there was a considerable decrease in the blood platelets and in 2 a marked decrease in the coagulability. The bleeding time was not changed. Viscosity was determined in 2 cases. In 1 of them it was still high 10 months after the suprarenalectomy. In the other it was 1.8 instead of 4.5 which is normal but after infusion of Ringer's solution it decreased to .8. Several days after the operation it was still .8. The suprarenalectomy did affect cholesterolemia and caused little or no decrease of glycemia.

Extraperitoneal of the left suprarenal capsule by the extraperitoneal route is not a dangerous operation. In the cases reviewed there was no mortality. The authors believe that the operation is indicated in Buerger's disease because in some cases it stops the progress of the condition and it almost always results in local and general improvement. In 3 cases this improvement lasted for several months and in 1 case for more than a year. In 1 case however amputation of the other leg was necessary 7 months after almost complete cure and in 2 others amputation was required soon after the suprarenalectomy. The latter however were in an advanced stage of the condition.

On the whole the results were good enough to justify further employment of the operation.

ANDREW G. MORGAN, M.D.

Neill T. E. Ligation of the Femoral Artery Below the Origin of the Profunda Femoris in the Treatment of Obliterative Endarteritis of the Leg. *Surg.* 1917 *LXXXI* 45.

In obliterative endarteritis the breaking down of the inner coat of the distal arterioles and infiltration with connective tissue gradually close the lumina of the vessels. Whether death of the part or healing takes place depends upon the collateral circulation. Ligation of the femoral artery below the origin of the profunda femoris is intended to stimulate the development of the collateral circulation.

The author reports the case of a man 50 years of age who had suffered pain of a spasmodic nature in the calves of the legs for three or four years. Two weeks previous to his admission to the hospital he

had an attack of severe pain in the left foot and small water blisters appeared about the great toe. The toes then became purple and necrosis of the distal phalanges ensued. There was considerable arterio sclerosis. The blood pressure and the blood sugar were normal and the Wassermann reaction was negative. There was faint pulsation in the posterior tibial arteries but none in the dorsalis pedis.

Ligation of the femoral artery was performed just proximal to Hunter's canal. Steady improvement in the circulation resulted with subsidence of the gangrene. The patient became able to be up and about but death occurred suddenly from what seemed to be pulmonary embolism.

The extent of the healing is shown by photographs of the foot and the extent of the collateral circulation by roentgenograms of the injected vessels.

WILLIAM J. PICKETT, M.D.

BLOOD TRANSFUSION

Sidbury J. B. Transfusion in Childhood. *J. Am. M. A.* 1927 *LXXXI* 85.

The author believes it absolutely necessary to cross match the blood before every transfusion with fresh serum and cells of blood obtained the day of the transfusion. He used the Unger method in practically all of his cases but believes that the method most familiar to the operator should be chosen. In infants the median basilic vein at the bend of the elbow or the saphenous vein over the internal malleolus are the veins of choice. If possible Sidbury avoids cutting down on the vein.

Table I shows the number of transfusions by years in the period from 1917 to April 1927 inclusive the number and percentage incidence of reactions the results obtained and the methods of transfusion employed.

TABLE I—SUMMARY OF CASES

Y	C	R		Z	Dol	P	S	F	L
		1	2						
07	5	7		4					
08			6	7	4				
09	4	6	3	4				4	8
10	6	4	4	5				4	5
11	9	6	4	9				8	35
12	3	5	5	1				7	35
13	3	3	5	7					4
14	5	55	7	4	0	6			
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In Table II are given the diagnosis the number of cases treated and the results obtained.

SURGERY

Sidbury draws the following conclusion

- 1 Transfusion is a most valuable therapeutic remedy in infancy and childhood
- 2 Cross matching before each transfusion with fresh specimens of blood is the only safe method of blood matching
- 3 The blood should be cross matched regardless of the patient's age
- 4 For patients who have been given transfusions with incompatible blood exsanguination transfusion indicated
- 5 Too little emphasis is placed on hæmolysis in blood matching
- 6 The indication for transfusion are increased as more is learned of the effects of blood in disease
- 7 Severe toxæmias such as are seen in severe burns erysipelas acute intestinal intoxication toxic pneumonia septicæmia infectious diarrhoea and carbon monoxide poisoning are greatly benefited by exsanguination transfusion
- 8 Respiratory infections of long standing are greatly benefited and their course is shortened by the administration of one or more transfusions
- 9 Malnourished patients with secondary anaemia begin to gain weight after a transfusion even if no change is made in their diet

EMIL C ROBINS A M D

SURGICAL TECHNIQUE

ANÆSTHESIA

Schmidt H. Nitrous Oxide Anæsthesia in Germany (Ueber die Stickoxydulnarkose in Deutschland) *5r Tag d d tsch Ges f Chir* Berlin 19 7

In Germany there is still some hesitation in the acceptance of nitrous oxide for the induction of anæsthesia whereas in the United States it is being employed with increasing frequency. There are statistics on more than a million nitrous oxide anæsthesias without a single death. The advantages of nitrous oxide are that it has only a slight toxicity its use is rarely followed by postoperative complications it does not cause disturbances of the intermediate metabolic processes such as occur in ether anæsthesia it does not cause a fall in the blood pressure it induces narcosis quickly and the anæsthesia is followed by quick recovery of consciousness. The danger of the use of nitrous oxide lies in the cyanosis that develops in deep narcosis the prevention of which is a matter of technique in the induction of the anæsthesia. Nitrous oxide is not suitable for every case. It is unsuited particularly for prolonged anæsthesia. In positive pressure narcosis in conjunction with oxygen (Draeger apparatus) it was found satisfactory in 2000 cases. As the gas is now produced by the I G Dye Works Germany is no longer dependent upon America for it and it is cheaper.

In the discussion of this report Hesse (Leipzig) reviewed the good results obtained with nitrous oxide anæsthesia in the Leipzig Surgical Clinic. He emphasized the absence of a fall in the blood pressure the relatively slight postoperative vomiting and the fact not to be underrated that the patient finds the anæsthetic less disagreeable than others.

Borr (Koenigsberg) recommended the ether apparatus of Ombredanne which he has used for three years. It consists of a metal globe with an attached mouthpiece. From 50 to 100 gm of ether are poured in at one time. As a rule deep anæsthesia results after five minutes. The technique is very simple the apparatus being therefore particularly suitable for the general practitioner. A further advantage in its use is the absence of an excitation stage and of postnarcotic disturbances. In the three years in which Borr has employed it there were only two cases of pneumonia. Borr attributes the good effect to the rebreathing of the expired air charged with carbon dioxide. By this admixture of carbon dioxide the depth of respiration is increased and disturbances during anæsthesia and following operation are prevented.

Gauss (Wuerzburg) stated that not all American statistics are so good as those cited by Schmidt. He referred to statistics showing three deaths in 2500 cases of nitrous oxide anæsthesia. Even less favor-

able reports have been made. The disadvantages of nitrous oxide are that it is not suitable for prolonged narcosis and during deep anæsthesia it causes cyanosis. Therefore it is necessary either to avoid deep narcosis or run the risk of cyanosis. Gauss prefers narcylen anæsthesia. The danger of the explosion of narcylen has been overcome by new apparatus. The effort must now be made further to improve the technique of its administration.

Martin (Berlin) reviewed 16843 ether anæsthesias induced at the Berlin Surgical Clinic by the drop method with the Schimmelbusch mask after the injection of 1 cc of holoponotropine solution. In this series there were no deaths or late injuries attributable to the anæsthetic. Any new anæsthetic must therefore be as safe as ether and possess also additional advantage.

Zaaijer (Leiden) welcomed the introduction of nitrous oxide anæsthesia into Germany. If nitrous oxide is as he believes better than other anæsthetics it will soon establish itself. He regards it as incorrect to allow the patient to become cyanotic. When the proper technique is used cyanosis can be prevented even in deep anæsthesia. The use of nitrous oxide is perhaps somewhat more difficult in gynecological operations. In these rectal ether narcosis is better. Zaaijer prefers nitrous oxide for greater operations and for surgery of the lungs and chest (positive pressure). It is suitable also for children. If the anæsthesia is not deep enough a little ether may be used.

Finsterer (Vienna) stated that he learned to use and value nitrous oxide in America. For extensive operations American surgeons use ether in addition and completely block off the operative field by novocaine anæsthesia. When the proper precautions are taken nitrous oxide anæsthesia is not only entirely safe but without any injurious after effects on the liver, brain and kidneys such as are produced by ether. Local anæsthesia and nitrous oxide anæsthesia should be used to supplement each other. Pain is prevented chiefly by the local anæsthesia. Finsterer reviewed thirty-two gastric resections performed in America in which nitrous oxide was used during the separation of adhesions and during the induction of splanchnic anæsthesia and the resection itself was done under local anæsthesia without narcosis (anæsthesia of the abdominal wall from the lateral border of the rectum to cause relaxation). He emphasized the advantages of nitrous oxide anæsthesia over ether anæsthesia and sees in its combination with carefully induced local anæsthesia of the abdominal wall and mesentery the safest type of anæsthesia known to date.

In conclusion Schmidt cited the favorable statistics of Mayo and stated that he does not favor narcylen anæsthesia. STETTINER (Z)

PHYSICO-CHEMICAL METHODS IN SURGERY

ROENTGENOLOGY

Bordier H. The Value of D therapy in the Treatment of Roentgen Ulcers (Ulcerations) of the Leg. *Arch. Surg.* 1917, 97, 89.

Bordier reports a case in which roentgen ulcerations on the lower part of the abdomen accompanied by severe local pain and impairment of the general condition developed a few months after roentgen irradiation for a uterine fibroid. He gave the patient liathermy treatment for 6 weeks—daily applications with 10 by 15 cm. electrodes over each iliac fossa 300 mads during a period of 10 minutes. To this he added emanations with a vacuum electrode and catheter dressings. Complete healing resulted after 4 months.

RADIUM

Russ S. and Scott G. M. The Action of Radon Seeds on Tumor and Lymph Cells of the Rat. *B. J. R. Soc.* 1917, 9, 39.

The experiments here reported were performed on normal rat liver and Jensen's rat sarcoma. The radon seeds were left in place for varying periods of time and sections were made immediately after their removal or forty-eight hours later.

Because of the difficulty of measurement and the rapid growth of the sarcoma a parallelism between the liver changes and the sarcoma changes was inferred or presumed rather than proved.

The description of the experiments is supplemented by photomicrographs and curves. The following conclusions are drawn:

When radon seeds are introduced into tumors and liver of rat limited areas of destruction result. The extent of the damage depends much more on the amount of energy absorbed than on the intensity of the radiation. The effect surrounding the body of the seed appears to be quite to some extent from the damaging effect of the radiation.

A. J. M. S. L. RAIN, M.D.

MISCELLANEOUS

Mayer E. The Fundamentals and the Clinical Aspects of Light Treatment with Especial Relation to Tuberculosis. *J. I. M. I.* 1917, 1, 30.

Mayer discusses the physical characteristics of light as photobiological effects sunlight versus carbon arc and quartz mercury vapor light, the development of pigment in response to light therapy, dosage, technique of exposure and the clinical results obtained with light therapy in tuberculosis.

He says that the indications for the therapeutic use of the various sources of light are still inexact and that the dosage of light cannot be fixed. The sources of light and the persons irradiated vary too greatly to allow any generalizations. The chief guides in light therapy are the signs and symptoms and skin reactions developing in response to the exposures.

The selection of a form of light therapy in tuberculosis may depend on the state of activity or the form of the disease. In febrile advanced cases it may be best to avoid the use of heat rays. In most forms of progressive acute tuberculosis except those of the intestine light therapy is probably not indicated. In any form of tuberculosis light is used merely as an adjuvant and should be combined with rest, good food and hygienic outdoor life.

In the author's cases the most favorable response to solar exposure has been obtained in the so-called paratuberculosis of children and in tuberculosis of the lymph nodes, pleura, bones and joints, peritoneum and intestines. The best results from the use of the carbon arc have been obtained in cutaneous bone and joint lymph node, peritoneal and ocular tuberculosis. With the use of the quartz mercury vapor light the most favorable response has occurred in tuberculosis of the intestines, hilum glandular, so-called hidden tuberculosis and cutaneous pharyngeal, laryngeal, ocular lymph node and peritoneal tuberculosis.

In pulmonary tuberculosis artificial sources of light are not important therapeutic aid.

JOHN S. COLTE, M.D.

Dore E. Oddy H. M. Eldon A. Gausman S. R. The Effect of Ultraviolet Light on the Skin. *Am. J. Surg.* 1917, 1, 97.

Dore called attention to the injurious effects of light acting as pathological conditions associated with constant or excessive exposure to the rays of the sun, solar dermatitis, hydroa, actinic keratosis, lentigo, made also of erythema ab igno which is due to the heat and infrared rays at the opposite end of the spectrum. Mechanical dangers in light therapy are the breakage of quartz burners but not from spluttering electrodes. The risk of electric shock is peculiar when lamps are installed in bathrooms. Deleterious effects on the eyes, burns from excessive exposure, debility and depression produced by too frequent or too lengthy applications and the possibility of light-gup disease or tuberculosis or aggravation of a febrile disease.

Oddy said that children react more easily and quickly to light than adults. The important signs of

overdosage are increased irritability, insomnia, and persistent loss of weight or failure to gain weight. Light therapy is indicated in surgical tuberculosis—especially tuberculous peritonitis and glandular tuberculosis—unless there is active disease of the lung. Cases of tuberculosis of the bones and joints progress better under light therapy than cases of peritoneal and glandular tuberculosis. Peritonitis with effusion is less favorably influenced than the dry forms.

LIDINOW stated that tests *in vitro* have shown that light increases the bactericidal properties of whole blood. The cause has not been determined.

GAUVIN regards sun treatment as the best form of radiation in surgical tuberculosis. He emphasized the importance of pigmentation of the skin as an indicator of the patient's response to the treatment.

SFQUEIRA said that in his clinic Campbell has noted no change in the metabolism produced solely by the general light bath. In the London Hospital clinic it has been found that light baths do not prevent the onset of acute specific fevers but are of great benefit in post febrile debility.

KONBURG stated that general light baths may light up unsuspected phthisis. Two cases in which this occurred were cited. JOHN S. COLLIER, M.D.

MISCELLANEOUS

CLINICAL ENTITIES—GENERAL PHYSIOLOGICAL CONDITIONS

Stone W S and C a e L F The Colloid Lead Treatment of Malignant Neoplasms
S g q 1 34

The author reports on the treatment of 1 case of malignant tumor by intravenous injections of colloidal lead. In the tumor, mammary carcinomata, 5 breast tumors and the remainder were carcinomata of the uterine retroperitoneal tumor, gossarcomata and metastatic (testicular?) tumor. The selection of the case was made entirely from the standpoint of the patient's safety. Tumor favorable for surgery or radiation and case in the final weeks of the disease with marked anemia are included.

The selection of the lead from that employed by Bell is being a more reliable and more reliable in the first injection containing no gelatin. The author recommends these not exceeding 0.05 m of lead. They attempted to use a mixture which would not produce a severe reaction. The inter alia between injections was delayed to minimize largely by recovery from the anemia following the previous injection.

Sign of lead toxicity followed all 56 injections but were severe in 4 instances. One alarming immediate reaction following a small dose was attributed to the gelatin which was used in that injection. The gelatin was thereafter omitted. During the 23 hours 3 severe reactions occurred. Two were characterized by hematemesis and jaundice. Two of these, the pleural effusion from metastatic mammary cancer. Sharp brief reaction with vomiting, a rapid pulse and prostration occurred 5 times. In practically all of the other cases the reactions were mild. None of the reactions was fatal. Except for occasional vomiting cramps and transient jaundice recovery was always rapid and complete. No serious injury to the liver or kidneys was observed. Destruction of red cells constituted the chief difficulty. The average loss was 9700 cells.

Progressive changes were observed in 8 cases. Four cases of mammary carcinoma showed appreciable regressions, which in 2 instances might be designated as temporary cures.

Lead appears particularly favorable in mammary cancer with bone metastases. In malignant osteogenic sarcoma lead with radiation seems to offer a valuable treatment. The use of radiation in these cases may appear to invalidate the results but analysis of the case shows that most of the tumor were radioresistant and showed more marked regression than occurs following radiation alone.

The authors have no theory as to how the lead produces the change in the tumor but believe that failure in a case of chorion epithelioma does not point to selectivity for trophoblastic cells. Lead alone or with radiation appears to produce sufficient regression in some tumors partly to confirm Bell's result but lead does not seem to offer a cure for malignant neoplasms. BURTON CLARK, JR. M.D.

GENERAL BACTERIAL PROTOZOAN AND PARASITIC INFECTIONS

Brun R G The Relative Value of Certain Clinic, Signs and Certain Laboratory Examinations in the Diagnosis of Echinococcus Accidental to the Finding in 20 Cases Treated Surgically
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From the 250 cases of echinococcus cysts upon which he has operated in Tunis the author concludes that the finding of laboratory examination are of practically no value. They do not become positive until the cyst is so large that it can readily be diagnosed clinically. The natives of Tunis do not come for treatment of these cysts until they disturb them on account of their size and Brun has been surprised to find how well they are borne.

The hydatid fremitus described by Dieulafoy as pathognomonic of hydatid cyst was noted only in 2 of Brun's 250 cases. Chauffard's sign of transillumination or transabdominothoracic ballottement was negative in all. The diagnosis was based on the presence of a round elastic somewhat fluctuating tumor and the disproportion between so large a growth and the light functional and general signs. In 95 per cent of cases of echinococcus cyst of the lung a roentgen examination is sufficient for the diagnosis. Of the 250 cases reviewed hydatid cyst of the kidney occurred in 5 (2 per cent) which shows that renal involvement is not so rare as generally supposed. In of the latter cases the diagnosis was made from hydatiduria preceded by renal colic and in 2 other copious hematuria was the result of the kidney tumor. AUGUST M. ROY, M.D.

DUCTLESS GLANDS

Wentz H L The Action of the X Rays on the Endocrine Glands. Radiology 1917 3

Röntgen radiation of endocrine glands has proved of value not only as therapeutic procedure in certain endocrine disorders but also in experimental investigations. As the various cell groups of

the glands differ in their radiosensitiveness it is possible by the aid of the roentgen rays to inhibit certain parts of the glands while others continue to function. Such a selective action was previously unattainable.

The actions which are theoretically possible when exactly graduated quantities of the rays are applied to an endocrine gland are (1) total destruction of the gland (2) temporary impairment of all of the glandular tissue with maintenance of the possibility of regeneration (3) complete destruction of highly sensitive cell groups with complete preservation of less sensitive cell groups and (4) a general increase in the activity of the cells i.e. stimulation. These possibilities require very exact dosage.

The ovaries present the most favorable conditions for work on experimental lines as they permit comparative measurements and the exact reproduction of the dose. By graduated quantities of the roentgen rays castration permanent amenorrhœa or temporary sterilization may be obtained results which are demonstrable by histological changes in the ovary. It can be shown also that with temporary sterilization the influence of the ovary on the endocrine system is preserved. This is proved by absence of the deficiency symptoms and metabolic alterations which occur with permanent amenorrhœa and total sterilization. Detailed accounts are given of the various histological changes produced by different dosages and the clinical results obtained are explained on the basis of these findings.

The author discusses also the interrelationship between the endocrine glands in various diseases as indicated by roentgen treatment. With regard to the interrelationship between the ovary and thyroid he deals with thyroid dysfunction of the ovary ovarian hyperthyroidism and dysfunction of the thyroid on the basis of hypothyroidism.

In dysfunction of the ovary due to hyperfunction of the thyroid which is manifested by polymenorrhœa and dysmenorrhœa roentgen ray treatment of the thyroid gland is indicated.

Persons with ovarian hyperthyroidism suffer primarily from an ovarian dysfunction which is often based on inflammatory changes and later develop hyperthyroidism. Roentgen ray treatment of the thyroid is not indicated in this condition but temporary sterilization is advisable.

In dysfunction of the thyroid on the basis of hypothyroidism the most important signs are polymenorrhœa increased and prolonged menstrual bleeding and hypofunction of the thyroid. Roentgen ray treatment of the thyroid is contra indicated. In cases of amenorrhœa due to hypothyroidism it is well to prescribe thyroid preparations with ovarian preparations. Stimulative roentgen ray therapy is contra indicated.

The article contains detailed histories of cases showing a disturbance in the interrelation of the endocrine glands.

ADOLPH HARTUNG M.D.

SURGICAL PATHOLOGY AND DIAGNOSIS

Watt J. C. The Deposition of Calcium Salts in Areas of Calcification. *J. Clin. Surg.* 97 x 89

Watt reports his findings with regard to the deposition of calcium salts in human artery walls calcified areas of choroid plexuses pineal glands and thyroid glands. He found that pathological deposition of calcium is not associated with any one type of cell but occurs in many different tissues that no living cells are included in the masses that there is no definite cellular membrane surrounding the mass to which its origin could be ascribed and that the masses of calcium are not encapsulated or sheathed by fibrous tissue suggesting a tissue reaction to them.

The most logical explanation for precipitation is the theory advanced by Wells and others that the calcium salts contained in solution in the blood and tissues are soluble only because of a fixed content of carbon dioxide in the solutions and that they are precipitated when the amount of carbon dioxide is decreased.

PALL C. COLONNA M.D.

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SURGERY OF THE HEAD AND NECK

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A t l M J o x 59
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I d c h P l 44
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F o t h d Z h h l k 9 7 48
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y t w i h a n e t m t b e d t h e c L S p r a w s
P o l y s M e d L o d 9 7 8
A d e m o f t h a l y g l d t h p t f a p o s b l
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b y m e s f t h e g t l c t o m n t M a r q u e z M e d
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A p c f e e l m e d f m t h e y w i t h a m g n e t
C T W F E k e t k y M J o 54
T w u o p t l l l s G L J o i s A c h
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H e r b e r t l I y S o M e d L o d o x 95
A y h e l d J M l t r o v J A m M A s s 9
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O t t s d f m d t h e y o d t h o t
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O l m f t a t b l s y p h l t b l
c g t l p l v F u c h P r o g d l c l M d d
9 7 64
I g s d e a s o f t h v W M c l A r e s J
M e d C t 9 59
E t r m l e y d i E R C o S l e y H b M J
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C s f l d e M s o n a d S t L o H D
L s A h O p h t h 9 7 l 469
T h l l m p o t a f m t t a t p h t h l m
I a u z a A h d m d g y e s p e l 9 90
M e t t t p h l g m p p h t h l m t G A
B r e t A m J O p h t h 9 7 3 s 685

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The p bl m of p e de fnes th h p of ts
s l tion by the h w k H S I RITCHETT I y
go cop 97 63

Th probl m f p o es de f th c l ad
ed cat on l p nt f l l B o n L a y n o p
97 xx 633

The p blem f p g de f e th tol cal
poit f ew l B D f c i l a r y c p 97 xx
634

Ré mé of the p t of th B a of st nd ds upon
d t h a H D W L A E R L r y n c p e 97
xx 63

E l y d e l p m t f the b n y p l of the h m n e
T H B A S T L r v g c o p e 97 65

C l t f th d l y m p l S R G U L r y n o s
c o p e 97 xx 649

A c t c o n d i t i o n s g l p t H D G I L M E
V g n a M M o t h 97 63

Th l t m e t f t n t s t d d f n e s
A l l e n a M l b e 97 9

O t t m d i a f t D M L I E R E A n O t l
R h o l & L r y o l 97 xx 64 [5]

O t t s m d f v I M C L L A A V J K n s s
M S c 97 335

L t e n t o t t n u g c h i l d n P T E S O T P
A o c m é d g t o 97 149

L t n t t t s m d a i n b d r s g c h i l d
Y F A N C I N I S m a m é d 97 96

A t e t t f t s t n f n e n c o t n s y t m c
c n d t s a d the f l of th c o d t o the
m e t h d o f t e t t h o e t g a t t t L W
D E A N A c h O t l a r y g o l 97 [6]

O t t s m e d c h c p l n t H H R I C H E S O
K e t k v M J 97 57

A s t u d y n t t c t h m b o C D A W R I G H T
M n n e s t M d 97 55

T u b e l s f t h m d l F R S P E C E R A c h
O t o l r y g o l 97 4

T u b c u l s o f t h m d l e w t h p e l f e c t o
h l o t h p y S J C H A I N V A O t l R h u n l
L a r y n g l 97 63 [6]

A i n t s t g c a f l b y t h t J J M c D M O R R
J O p h t h O t l & L y 97 xx 343

M é n é d a s t t e d b y t h l e c t p l o o d A
F E R G U S O V B t M J 97 454

C h l t t o m W G S H E T E Y J J O p h t h O t o l
& L r y n o l 97 33

I m p e s s f t h e d a s t r i c r e g t h m s t o d d t h e
c o r s o f t h t n e n G B L A C R O V I 97
t a l d h 97 9

A m a t d s e W D E A N K e n t l y M J 97 xv
52

A n u n s l m a s t d a s e A H N O R T O N N t h w e s t
M d 19 463

A c u t m t d t u s w t h t p p t f f e c t o f t h
m d l e W H S E A R S A t l t c M J 97
783

A c u t m t d t w t h c o m p l t f c l p l v s
c e r y f t r p a t A G R E E t r v A n O t l
R h l & L r y n l 97 xx 634

D b l e m t d t s w t h t l t t h m b o f l l w
n c l t f H H I R S L E R A t l a t c M J 97
xx 8

M a t o d t n f t s p o t f 4 p t e d c
J B S M B R S t h M J 97 73 [6]

T h e l o f b o p l l f d f l l w g l o f t l a
R B O M P E R R p c i d d 97 97

T h s e l f m e p c l t m t s t l g l
s u r g e y P C A C C L L U P I A c h t a l d i c h 97 xx
86

Nose and Si uses

Th f h p l a t y b y t h A g n t i n m t h o d
O I V A N I E V I C I A d R C F E R R A R I B l s t d c f
97 97 113

The c c n t p c d t y p e s o f s a d d l n o t h
m d m p l t o f b o a d c a t l g L C O H E N A n n
O t o l R h o l & L r y n l 97 xx 639

N s l a f f e c t n c h l d h d D G U T H R I E P c t
t 97 xx 47

N a l m n f e s t t i o f l l a y C H E Y E R M A V
A O t o l P h n o l & L a r y o l 97 xx 88

A c h m f m t h t a d p o n t f t h e h i o l o t E
M C G I N N I S J A m M J 97 1 xx 99

A o t h m i l e s t o e p s d t h t e a t m t o f a s t h m a
A W L F R G E A m M d 97 568

H y p r t h e t c r h i n t s d m y c o d m a F J N o x
J A O t o l R h l & L r y n o l 97 xx 47

T l t p c a l a p p l c t o o f c o c t h o s E
F H O V A R D N w O l e a s M & S J 97 1
6

S p h o p l t g a g l o n t t m e t o f c t a n
c d u W D C I A S E A t l n t c M J 97 xx
79

The t a o g p l a m t o f o z e a G H E R A R D O
I E R R E R I & L I A R O L A h i n t n t d e l r y n l
97 769

O r e d d m a l c y l t D U T H I E L L t d e L A M O T H E
A c h t t d l a r y l 97 794

P e a t a l s y m p t h c t m y a s a t t m t f o x b
l t E C A S T E R A N A h t m a t d l r y n o l 97
xx 8 R p a l d a d s 97 89

C l l o b t o n s a c o f a s l y p h l u s G
C A N U V d J C H U M E R I A c A c h t e n a t d l r y n l
97 83

A h l t h o f n u l s z A L B S S K e t c k y M J
97 533

Th l t o f a s l p o l y p t n f l m m t o f t h c
e s s o r y e s f t h o T B L Y T O V P o R o y
S M e d L d 97 xx 74 [6]

Th p n l c t e s D C S M Y T H A r c h O t o l r y n
g l 97 49

C h a l t e a d s s n f t o n W E G O V E A b
O t o l a y o l 97 237

S m p h s o f a c r y n s d i s M C M E R S O
A c h O t l r y n l 97 97

A c c f u t s w t h c m p l t s p h l e m n o f t h
o b t J A G N P o c R o y S o M d L d 97 xx
776

M t s f l o r i t d y s r g l t m y
R F N L S O V A n O t o l R h o l & L r y n g o l 19 [6]

A c o f f t l t J A G r i n P o R y S o c
M d L d 97 xx 776

G t l t c o m p l e x t e d b y t a d l a b c a d
f t l l b e b c J M B R O N A n O t l R h n l
& I r y g l 97 xx 17

G t l m p y m y h l l n w t h s e a l
c p o t I M L U R O V A O t l R h l & L r y n
g l 97 1003

D f t h t h m d l b y t l L M C A L A W
A O t l R h l & L a r y n l 97 1733

Th a l a p p l t o t h t h m d C A V e c r
M e d J A t l 97 469

C f h o c m p y m f t h t r u m f t p a t
t h f o n t l u n H K s c t P o c R y o c M d
L o d 97 77

M l b n t p l a m f t h t r u m G H T H O M P
A n n O t l R h u n l & L r y g l 97 xx 75 [7]

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 Soc Med Lond 9 68
 Trichloacetate of the larynx with glottis stenosis
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 Anit laryngeal tumor of the larynx with glottis stenosis
 I Botson P oc R y S M d L d 9 1769
 Bromata (oppleloma) of the larynx with glottis stenosis
 P oc R y S M d L d 9 7 xx 9
 A p t d p p l o m f t h l r y e f d g n o
 N S CARR E P C R v S M d L d 9 7
 74
 C c f t h l a r y n I O Z N R m e l d P o s a o
 9 36

Cancer of the larynx J C FLORE R méd d
 P o 927 x 37
 Malignant cancer of the larynx and oesophagus treated by
 dummagat n F R HERRMAN Laryngoscop
 9 7 x 664
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 f l r y o f e W HOWARTH I R y Soc Med
 L d 9 7 x 74
 T r e s o f l r y g e t m y M TITONE A ch ital
 d ch 9 1 99

SURGERY OF THE NERVOUS SYSTEM

Bain and Its Co er ngs Can d Ner es

The localization of the lesion of the brain
 WATKYN TH J l v l & Otol 9 l 55
 593
 The section of the brain of the brain
 NLD C D t h m d Wch h 9 l 9
 S m p h y l l p p h t h d f e
 b a l a d m e d l l v m p n A I I I R E l
 m e d P 9 7
 T m t a p o p l y m t h a f t t h j y B R I S E T
 Bull t m m S t d l o l 9 8 3
 A f t m t c j k p l e p y i W E R
 E k o d L F t r c I o h o 394
 J k s o p l p v d t o h y d t d c y t M
 ALURR LDE M J S E H d L D L C R P
 l d d 9
 A c e f a p h a d e t m t o f t h t f f t d
 A P B R W B t J R a d l o c 33
 A l c h o l j t t o t h t o f t h t h t o
 V V N S A R O F F Z e t r l b l f C h i 9 7 l 48
 Th m p l v d m f t h e g f t h h m V
 C H I T I A N S E N L l l m d o 46
 B h c f t t F L H A Otol
 Rh ol & L r v g l o c 68
 A h o n t m p o p h d l b d c o d d g
 n p p t c t p p t t m d a p t o f a
 w t h p t m t m t t I R R B E R T
 A c h O t l y n g l 9
 T p h i n t f t h r p l l m D G O T R E S a d
 D E F S J d e h 9 7 4
 Th h y p h y n d h t r n a l t o f t h e a y
 I B O U R a d H S t r B l l m c d 9 7
 94
 Th fluc f h p h y g l d o t h e l y p
 p l y s e l y t m S C R E I R f m m d 9 7 l
 697
 Hypophyseal vein of the larynx
 t a n p h d l t W E T I E R d B R R A V D
 L y o c h u r 9 460
 O b r v t f p t a r y t m v i t h l t l
 q u d t h e m p I G S P F W E V g M
 M t h 9 7 l 3
 D t r u t m e t t a t l f t h h y p p h y
 D O M I N G U E Z I A G O d M O L A I m e d d
 U r g y 9 7 xx 43
 A s f a m a l g g t m B R s f g e A r t
 R m c d d B c l 9 7 4
 Hypophyseal vein of the larynx
 G G R O Z I A h t l d c h 9 63

The importance of the report of the
 g v e s p c l l y g a d t h a s e d p t l
 h y d o p h l f t o p a t n s o s p b i d a H E R R I C H
 Z n t l b l f c h 9 7 l 384
 Hyd phal f y J F J A I G S S g C h n
 N l m o
 The phy p thol gy d t e m t o f h y d o c e p h a l
 M T S r C l y l b 9 9
 C l l l o m a d y t a m l h a m h
 A R E M O V A G C a d H C O L U M B I E A m e d 9
 T b e u l m f t h b n F D W E R C R t o
 f t l m o l v d c r u g l 19 7 78
 C d t c f b a f t m o c d b y
 o a t g t h a p y S A T T L J A t i t p i a 9 7
 Th d g d t e a t m t f b a n t m s W E
 D v o y J I d i a S t t M A 9 7 x 39
 The p u n e l g l d P T H I E R I N G B t M J 19
 546
 L y p e m e n t l t d e s o f t h f u t o o f t h e p u n a l b y
 P D E M E L M t t d G e g d M e d C h i 9 7 l
 32
 T m s o f t h p e l g l d M B L A D O A c h a r g e n t
 d e n u l 9
 N o f o n t l c p h l m n c l a d e g t a l h d
 p h l C B U N E T A h t a l d h 9 7 x
 6
 A b t l m c c p h l c e l t d w i t h
 m c p h t r u l m C o i v J m M i s 927 l x
 746
 S m e t y p o f m g t B C R t v m A b l a
 S t t M J 9 336
 M a n g t d t o h a m p h i l c b l l s J A B
 H I C K S l t 9 7 c 49
 M f f b l l s m n g i s A S C H N I B E L M d S
 g a 9 7 l 339
 A o m m o f t m g t I J C H
 P o l l R m 9 p t 35
 A t m t A M G L A l i f r m m e d
 9 l 98
 S m c d t o t h e t o l c l d o s i s d
 t h e t m t f c t m i g t M A M c t A n
 m d o 6
 M a n g t f p h o d l h i n M A 19
 P R y S o c M d L o d 9 7 x 763
 P m y m e g t d u t o m m p d t n e r v u s e
 q u l a L J O I T P H I L L E M d L J U S T I N
 B e z a c o v B l l t m e m S o c m e d d h o p d e P 19
 1

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SURGERY OF THE CHEST

Chest Wall and Breast

Tl f ct l p ty of th f m l m mm ygl d
 A Kol m A h f k d h 9 l 8
 A c n tal b e t t m C N T INING B t
 M J 97
 Ac t b t t th d f P t d of the
 pl nd G hyp th J M W HT Am J
 S g 9 8
 Bl d f m the pl J G K A t h b
 S d 9 l 5 [11]
 Th mpo t f pl th m th t t
 m t of m mm y A J B o k Am J Ro t
 g ol 9 44
 A t dy f th m l t b t l y h l s t d
 l y bl c s t m th l J l A R S b Gy c &
 Ob t 9 l oo [11]
 M mm ry sa c m d t l t t th o f th
 b t d t b b t t m M B E B t
 kl Ch o l
 Th n t t m t f m of th t t
 J P LLICKE S Cl y l a l 9 5
 Th t atm t f of th b t b y d t
 E O r l sch 4
 A m pl t p t f f t l b t J F
 JEN I G S g Cl N Am J
 Th t m t f f t l t t th d w th t
 b q t t t m t D SCHO d C
 ORB A t d l 9 [11]
 Il t l f l d f t f l l amp t to f
 th b t A R C Z t l l f l l q l 93

Trachea Lung and Pleu a

N tes of th f o ch p e c W S S ME I
 Io S M d L d o f o
 F b d th d f d l g s H I
 KE N O l M S J 9 l 84
 Th N d f f b d th p s
 and th a s ph b C M c ALD M d J A t l
 9
 P d t l t m t l th l r y t leol
 chial t I Mc Ill o M J o l S
 A l l d th l d by bpl l
 mphy em S A E A t d l o
 B smuth bc bo t d l p d l l m pp s
 F H L s i S g Cl N Am 9 93
 Th f d i z d l th l i z t n f th bo
 chial t e L C A AL J K M S 9
 29
 Iodi m foll w th t bo l l j t f l p dol
 E LIBE r a d M B E B l l t m m S c m d d
 h o p d Pa h o s [11]
 F th ob t n th t v t atm t f
 b h l th m d all d co d t I GE FR
 R d lo y o 9
 New d el pm t p lmo phy logy J K t
 A ch m e d h del pp p 9 4
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 l ry om f th lu chuldh d A STOKAS
 d P S A UIRRE S m m e d 97 5
 Th t m t f c t pp t ple y h l d e
 J A B R Am J Sug 97 3
 O th p n c f p t e t d n ob m se
 f p t d pl y F BEZ c v A J COLETT E
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 f p t m d t l pl y with
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SURGERY OF THE BONES, JOINTS MUSCLES TENDONS

Conditions of the Bones Joints Muscles Tendons Etc

Minors juris reperienda et dability F I HAMMOND *Ill nois M J* 19 li 237

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Two cases of congenital amputation of the foot H I ROCHER and I MASSÉ J ev d orthop 10 xxvi 3 9
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A family of familial claw foot A B JONES Med Clin N Am 19 vi 3 5

Surgery of the Bones Joints Muscles Tendons Etc

The third report of progress in orthopedic surgery I D WILSON I T BROWN H C LOW M N SMITH I PETERSEN and other Arch Surg 19 7 vi 478

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SURGICAL TECHNIQUE

Operative Surgery and Technique Postoperative Treatment

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The history and therapeutics of static electricity W B Snow Clin Med & Surg 1927 xxvii 664
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MISCELLANEOUS

Clinical Entities—General Physiological Conditions

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Non painful abscess G T TYLER JR J South Carolina M Ass 19 7 xxvii 460
Padium therapy and diabetes F MACCHIA Actino terapia 1927 vi 178
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Cancer in the history of medicine G ROUSSY Presse m d Par 19 7 xxv 849
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The Institute of Cancer Research Columbia University I C WOOD N York State J M 19 7 xxvii 005
The cancer exhibit of the Medical Society of the State of New York I OVERTON N York State J M 9 7 xv ii 097
The etiology of cancer B T SIMPSON N York State J M 1927 xxvii 1006
Some notes on cancer W MEYER Med J & Lec 19 7 xxvi 77 349
Some observations on the cancer problem DREW N Zealand M J 1927 xxvi 25
Some observations in the nature of cancer Preliminary report Studies in the incidence and inheritability of spontaneous tumors in mice M SLAY J Cancer Res sea ch 1927 x 35
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The treatment of malignant disease B F SCHREINER N York State J M 1927 xxvii 010
The medical treatment of cancer Faronakis method J G BERRY Bull Soc d obst et de gynéc de Par 19 7 vi 441
Sulphur in the treatment of malignant tumors O CIGÖZZI Riforma med 19 xliii 68
The colloidal lead treatment of malignant neoplasms W S STONE and L F CRAVIER Ann Surg 19 7 lxxvi 34
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A case of cephalic tetanus W FELTCHER and J P LITZPATRICK Lancet 1927 ccviii 545
The pyogenic activity of the bacillus S ROLLO Ann ital di ch 1927 vi 685
Rat bite fever J I FOSTER Atlantic M J 1927 xxv 784
Rat bite fever—report of a case with demonstration of the causative organism and its use in the treatment of parvosis S BAYNE JONES N York State J M 1927 xxvii 13
The bacteræmia due to bacillus perfringens L BOEZ and J SCHREIBER Presse méd Par 9 7 xxv 1122
Septicæmia due to perfringens bacilli of buccodental origin G CAUSSE and L GLUCK Bull et mém Soc méd d hôp de Pa 19 7 xliii 1244
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CONTENTS

I	Index of Abstracts of Current Literature	iii
II	Authors	ix
III	Editor's Comment	x
IV	Abstracts of Current Literature	87-144
V	Bibliography of Current Literature	145-172

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CONTENTS—FEBRUARY, 1928

ABSTRACTS OF CURRENT LITERATURE

SURGERY OF THE HEAD AND NECK

Head

- TRY R M The Structure and Origin of the Mixed Tumors of the Salivary Glands 87

Eye

- PINES N Arterial Hypertension and Retinal Changes 88

Ear

- WILLIAMSON G S, RICHARDS F H and Others Discussion on Progressive Middle Ear Deafness 88
 ARNOULT N The Lymphatic of the Ear 88
 HORNE J The Formation of a Circumscribed Intradural Abscess at the Site of the Sacral Endolymphaticus 89
 PORTMANN G Vertigo Surgical Treatment by Opening the Sacral Endolymphaticus 89

Nose and Sinuses

- GUTHRIE D and DOTT N On the Occurrence of Brain Tissue within the Nose the So Called Nasal Glioma 89
 REBATTU J and PROBY H Experimental Ozena 89
 BARANGER The Treatment of Malignant Tumors of the Nasopharynx 90
 SEGURA V and ZUBIZARRETA H Recklinghausen's Fibrous Osteitis of the Sphenoid and Ethmoid Sinuses 90

Mouth

- BERRY SIR J, GREY TURNER C, ADDISON O L, VEAU M V and Others Discussion on the Treatment of Cleft Palate by Operation 90
 BUNNELL S Cleft Palate Repair—The Cause of Failure in Infants and Its Prevention 91
 FITZWILLIAMS D C L The Treatment of Cancer of the Tongue 91
 MACKENZIE D W and WAUGH T R Cystadenoma Pseudopapilliferum Malignum of the Kidney with Metastases in the Tongue 123

Pharynx

- OCHSNER A and NESBIT W Pulmonary Abscess Following Tonsillectomy Preliminary Report 97

Neck

- DUNHILL T P Toxic Goiter The Place of Surgery in Its Treatment 9
 MURRAY G R Toxic Goiter Indications for Surgical Treatment 92
 FLETCHER F M and FITZGERALD R R Malignant Diseases of the Thyroid Gland 9
 PORTMANN U V Radiation Therapy in Malignant Disease of the Thyroid Gland 93
 CLERF L H Laryngeal Complications of Irradiation 93
 LITVAK S A Case in Which Skin Was Grafted in the Laryngeal Cavity by the Thiersch Method 93
 HANFORD J M Roentgen Ray Treatment of Tuberculous Cervical Lymph Glands A Study of 41 Patients Treated by Small Doses of Filtered Roentgen Ray with Follow Up Results 138
 CLUTH H M The Surgical Treatment of Tuberculous Gland of the Neck 138

SURGERY OF THE NERVOUS SYSTEM

Brain and Its Coverings Cranial Nerves

- GUTHRIE D and DOTT N On the Occurrence of Brain Tissue within the Nose the So Called Nasal Glioma 89
 GRANT F C Chronic Subdural Hematoma 94

Spinal Cord and Its Coverings

- BERNARD A, HERMANGE M and DELCOUR J A Case of Medullary Compression by Primary Tuberculous Cervical Pachymeningitis 95

Peripheral Nerves

- PERERA A Anatomical Anomalies of the Phrenic Nerve and Their Influence on the Effects of Resection in Pulmonary Tuberculosis 95
 DESGOUTTES L and DENIS R Delayed Paralysis of the Ulnar Nerve Following Fractures of the External Condyle of the Humerus 95

SURGERY OF THE CHEST

Chest Wall and Breast

- FINZI N S and Others Discussion on X Rays and Radium in the Treatment of Cancer of the Breast 96

- NOVAK E. Ovarian Metastasi with Cancer of the Uterine Body Is Transutal Implantation an Important Factor? 113

External Genitalia

- PETLHSON R. Transplantation of the Ureter into the Bowel to Secure Sphincteric Urinary Control in Incurable Vesicovaginal Fistula 113

Miscellaneous

- WHITEHOUSE B. Some Problems of the Menstrual Function with Ovarian Cystitis on the Relation of the Ovarian Follicle and Corpus Luteum to Pathological Uterine Hemorrhage 4
 IAPOLLO C. The Topography and Clinical Aspect of Tumors of the Female Genitalia 114
 HAMANT A. and CORNILLI Th. Lymphatic Origin of Certain Cystic Formations in the Prostate Gland Following Total Castration of the Male 5
 GUILLMIN A. Stricture Amputation in the Prostate Following Operation 5

OBSTETRICS

Pregnancy and Its Complications

- HOLTERMAN C. Pelvic Pregnancy After Amenorrhea Induced by Röntgen Irradiation of the Ovary 6
 TAUSIG T. J. The Amniotic Fluid and Its Quantitative Variability 16
 GUILLMIN A. Extra Uterine Pregnancy Ruptured by Stricture of the Uterus with Compensating Hematocel 16

Labor and Its Complications

- DELEE J. B. Typhoid as a Complication of the Maternal Laceration During Labor A Preliminary Report 116
 HENDRY J. Spontaneous Rupture of the Uterus Before or During Labor 117
 JALLET H. The Value of Cesarean Section 117

GENITO URINARY SURGERY

Adrenal Kidney and Ureter

- PAOLUCCI F. A Histologically Benign Hypernephroma in a Hemal Sac 100
 PETERSON I. Transplantation of the Ureter into the Bowel to Secure Sphincteric Urinary Control in Incurable Vesicovaginal Fistula 113
 BEGG P. C. Incontinence of Urine of Internal Origin 118
 THOMSON WALKER SIR J. Tuberculosis of the Kidney 118
 FULLERTON A. Statistics of Postoperative Survival in Renal Tuberculosis 118
 THOMPSON T. Carbuncle of the Kidney 121
 DANHIEZ P. Multiple Infarcts of the Kidneys 121
 BIANCHIERI T. The Diagnosis and Treatment of Malignant Tumors of the Kidney 122

- MOTZ G. Pyelography and Pyeloscopy in the Diagnosis of Tumors of the Kidney and Pelvic Pelvis 122

- MACKENZIE D. W. and WAUGH T. P. Cystadenoma of the Papillary Epithelium of the Kidney with Metastases in the Tongue 113

- MARONA I. Duodenal Fistula Following Nephrectomy 123

- GAUDIANI V. Surgical Treatment of the Ureter with an Extravesical Opening 114

- SCHREIBER M. Ureteral Stricture Its Anatomical and Pathological Background Based upon the Findings in 100 Consecutive Autopsies 114

- CARSON W. J. Metastatic Carcinoma in the Ureter 115

Bladder Urethra and Penis

- GRAVES R. C. Studies on the Ureter and Bladder with Especial Reference to Regurgitation of the Vesical Contents The Bladder Pressure Curve in the Human 115

- JONES J. J. and LOWER W. I. Inflammatory Lesion of the Bladder Simulating Neoplasm 125

- HEIMANN F. The Changes in the Bladder in Case of Cancer of the Uterus Treated by Irradiation 126

- DEAN A. L. JR. Ulceration of the Bladder as a Late Effect of Radium Applications to the Uterus 116

- TALCONTI I. A New Method of Treating Hypertrophy of the Prostate 116

Genital Organs

- LOWER W. I. Complete Closure of the Bladder Following Prostatectomy 127

- CAMPBELL M. F. Gonococcus Epididymitis 127

- MORRIS J. H. Malignant Tumors of the Testicle with Special Reference to Classification 118

Miscellaneous

- CUTLER I. H. Obstruction of the Urinary Tract 128

- KRIEUTSMANN H. A. R. Eosinophilic Involvement of the Urinary Tract 128

- IBERBACH C. W. and ARN R. D. Hexylresorcinol in Urinary Tract Infections Therapeutic Effect 129

SURGERY OF THE BONES JOINTS MUSCLES TENDONS

Conditions of the Bones Joints Muscles Tendons Etc

- SCHAUFFLER R. McC. Recurrent Multiple Osteomyelitis Due to Staphylococcus Aureus 130
 DRGA W. and ZEHLAND J. The Pathogenesis of Osteitis Fibrosa 130
 BÉRARD and TAVERNIER. The Treatment of Osteosarcoma by Physical Agents 130
 GRUCA A. A Case of Congenital Ulno Palmar Club Hand with Subluxation of the Fingers 130
 DONATI M. Lower Dorsal Kyphosis in Adolescents 131

WOMACK N A Subungual Melanoma Hutchinson's Melanotic Whitlow		WOOD T C Combined Radiation and Lead Therapy	140	14
SLYE M Some Observations in the Nature of Cancer Preliminary Report Studies in the Incidence and Inheritability of Spontaneous Tumor in Mice		ULLMANN H J Colloidal Lead and Irradiation in Cancer Therapy		14
SSOKOLOV N N The Changes in the Histological Structure of a Cancer Following Section of Its Sensory Nerve Supply and the Influence of This Neurotomy on the Course of Various Pathological Processes	141	Surgical Pathology and Diagnosis		
		DUIGEON L S and PATRICK C V A New Method for the Rapid Microscopical Diagnosis of Tumors with an Account of 200 Cases so Examined		14
	14	LEWIS W H The Vascular Patterns of Tumors		143

AUTHORS

OF THE ARTICLES ABSTRACTED IN THIS NUMBER

- Addison O L 90
 Andre en A T R 101
 Angelelli O 135
 Armani L 96
 Arn R D 29
 Arnoult N 89
 Babcock W W 100
 Baranger 90
 Barnes F L 108
 Beggs R C 118
 Berrard 130
 Bernard A 95
 Berry Sir J 90
 Biancheri T 1
 Bonnet I 109
 Boorstein S W 134
 Botreau R u sel 05
 Brisset 13
 Bunnell S 9
 Butl r H B 103
 Cadenat 104
 Campbell M I 127
 Car n W J 5
 Clif f L H 93
 Clute H M 138
 Cohn I 133
 Constam G R 136
 Conwell H I 33
 Cornil L 5
 Cutler I H 128
 Danhuc I 121
 Dea A L Jr 6
 Dega W 30
 Delcours J 95
 DeLee J B 116
 Denis R 95
 Des outtes L 95
 Deveze L
 Donati M 3
 Dott N 89
 Dro gemu ll r E H 0
 Dud o L S 4
 Dumas A 37
 Dunhill T P 9
 Duval P 102
 Dyke S C 37
 Eberbach C W 29
 Ebert E M 9
 Ebb r K 0
 Falcone R 126
 Fallis I S 106
 Finzi N 96
 Fitz gerald R R 92
 Fitzwilliam D C L 91
 Fontaine R 137
 Fry R M 87
 Full r n A 118
 Caudia i A 4
 Cant I C 94
 Crantham S A 3
 Crave P C 125
 Crav W P 2
 Gre n C H 06
 Rcy Turn r G 90
 Cruca A 30
 Cuillemin A 115 116
 Cuthne D 89
 Hamant A 15
 H nfo d J M 138
 Haselhor t G 09
 Hedblom C A 98
 Heimann F 126
 H ndry J 117
 Hermange M 95
 H rtzler A E 108
 H lt rmann C 116
 Horne J 89
 Horsley J S 102
 Ivy A C 101
 Jellott H 17
 J n n n s J E 98
 Joel n J J 15
 Judd E S 104
 Kaplan I I 110
 Keene F E 113
 Keller R 99
 Kreutzmann H A R 18
 Lambinudi C 13
 Leriche R 103 137
 L i D 140
 Lewis W H 143
 Litvak S 93
 Lov r W E 125 127
 Luhmann K 96
 MacKenzie D W 123
 Mar gna I 23
 Ma on J T 101
 Masson J C 11
 Ma rodin D 137
 McI he ters H O 136
 Meyer J L 101
 Moniz I 36
 M rris J H 18
 M t r C 122
 Murray G R 9
 Nesbit W 97
 Novak L 3
 O h n A 97
 O good R B 3
 Ian coast H K 113
 Pa lucci I 100
 Papin M 2
 Park r D W 98
 Paroli G 114
 Patrick C A 14
 P ndergra s L I 13
 P rdoux 104
 Perera A 95
 Permar H H 131
 Iet r n R 113
 P ccardo T J 111
 Pier on I H 97
 Pinc N 83
 Iortmann G 89
 Portmann U A 93
 Pratt J I 106
 Irobby H 89
 Putti A 134
 Ramond L 99
 Ravault P 37
 Razzaboni G 106
 Rebattu J 89
 Richard E H 88
 Ri ano Irrera D 09
 Ritvo M 100
 Rowntre e L G 06
 Schauffler R McL 130
 chmit H i 0
 Schreiber M 124
 Segura V 90
 Shipley A M 133
 Sly M 141
 Sn ll A M 06
 S okolo N N 4
 Tebbing G I 134
 Taus ig F J 116
 Ta ernier 130
 Thompson J 121
 Thomson Walker Sir J 118
 Tzovaru S 137
 Ullmann H J 14
 veau M A 90
 Verbyckce J R Jr 102
 Wallace J O 31
 Waugh T R 123
 Weill Spire R 99
 Weiss S 100
 Whipple A O 107
 Whitehouse B 114
 Will am on C S 88
 Womack N A 140
 Wood I C 14
 Zeyland J 30
 Zubizarreta H 90

EDITOR'S COMMENT

A FURTHER report of Slye's experimental studies on cancer in mice with particular reference to the incidence and inheritability of certain forms of malignant growth (p. 141) is of great interest not only because of its bearing on the pathogenesis of malignant tumors but also because of the impetus it gives to the study of cancer control and the encouragement it affords to the hope that cancer may some day be eradicated. That mice which belong to a resistant strain do not develop a subcutaneous sarcoma following trauma that mice born of mothers with cancer do not develop cancer either in infancy or later if the father is resistant to cancer and that cancer resistance is dominant over cancer susceptibility are emphasized as significant facts with reference to the inheritability of cancerous disease.

The fact that the mice which develop early breast cancers are among the largest and strongest specimens that in spite of the presence of large tumors such mice show little systemic change before infection and the absorption of dead tumor tissue occur the fact that cancer does not interfere with reproduction that the young born of cancerous mothers never have cancer in infancy that the growth of tumors is retarded during gestation and that in animals with an anterior axis the growth of both the animal and a cancer is more pronounced at the anterior pole—all are cited with other facts as evidence pointing away from the theory that cancer is a germ disease. In the author's opinion no observation made in her laboratory during eighteen years of experimental study has been consistent with the germ theory of cancer.

Dean Lewis' discussion of gangrene of the extremities (p. 140) and W. H. Lewis' beautifully illustrated studies on the vascular patterns of tumors (p. 143) emphasize the increasing interest that is being shown in the study of the vascular system under normal and abnormal conditions. Since Brooks' observations on the possibility of demonstrating the permeability of the arteries of the lower limbs by the injection of sodium iodide

(*J. Am. M. Ass.* 1934 LXXVII 1016) and the more recent experimental studies of French and American workers with injections of iodized oil into the arteries of the lower extremities new impetus has been given to the question of diagnosis of vascular lesions and of their location and extent. Needless to say the discovery of insulin and the increased safety afforded by its use in the many cases of vascular lesions complicated by diabetes have been important factors as well. Lewis' suggestion to force the formation of the collateral circulation in the leg by ligation of the femoral artery in cases of thromboangitis and Holman's advice to occlude the corresponding vein under some circumstances above the site of arterial lesion when ligating a large arterial trunk (*Ann. Surg.* 1927 LXXXV 173 INT. ABST. OF SURG. 1937 XLV 189) are some of the practical conclusions resulting from these studies.

Schreiber's investigation of the findings with reference to the presence of ureteral stricture in 100 successive autopsies (p. 144) is an interesting contribution on this much discussed question. The author stresses the importance of congenital narrowing of the ureter of secondary involvement following inflammation of the pelvic viscera particularly the bladder and of compression by the vas deferens and uterine artery. Of the two causes the second group is particularly significant for it is in ureteral strictures resulting from inflammation of adjacent structures that treatment particularly prophylactic treatment offers promise of success.

Grant's interesting paper on chronic subdural hematomata (p. 94) Fry's careful study of sixteen mixed tumors of the parotid and submaxillary gland and his conclusion that these tumors are not mixed (p. 87) that they are entirely epithelial in origin and do not contain cartilage Botreau-Poussel and Cadenat's report of a case of ileo-ileal intussusception in an adult (p. 105) and Hedblom's discussion of the diagnosis and treatment of bronchiectasis (p. 98) are a few of many other recent papers deserving careful consideration.

INTERNATIONAL ABSTRACT OF SURGERY

FEBRUARY 1928

ABSTRACTS OF CURRENT LITERATURE SURGERY OF THE HEAD AND NECK

HEAD

Fry R M The Structure and Origin of the
Mixed Tumors of the Salivary Glands *Brit
J Surg* 1927 v 291

This article is based upon sixteen typical mixed tumors and nine atypical tumors of the parotid or submaxillary glands which were removed at St Mary's Hospital London in the period from 1912 to 1923.

The typical mixed tumors show two main types of tissue (1) that in which the cells are abundant and lie closely packed together and stroma is very scanty or almost non-existent and (2) that in which there is considerable stroma and the cellular elements are widely scattered and lie singly or in small groups.

When there is much parenchyma and little stroma the cells being closely packed together show very indefinite outlines. Their nuclei are large and round or oval and show distinct nuclear markings and often a well marked nucleolus. When there is abundant stroma the scattered cells show a tendency to become triangular or spindle shaped and the nuclei generally lose their regular shape and clear markings.

The stroma consists of two distinct parts—one a network of fine fibrillar connective tissue and the other a substance closely resembling mucin and staining with Mayer's mucicarmine. The latter substance varies in its appearance in places having a definite fibrillar structure when it stains intensely with mucicarmine and in other places being quite homogeneous in appearance not unlike the matrix of cartilage. Where the mucinous stroma is homogeneous the cells occasionally seem to lie free within small circular vacuoles in the stroma and around the periphery of these vacuoles there is usually some condensation of the mucinous material leading to the formation of a more deeply staining ring. In these areas the appearance is scarcely distinguishable from that of a matrix of cartilage.

In the arrangement of the cells four variations have been noted

1 Irregular masses without definite arrangement. An adenomatous arrangement suggesting glandular and gland duct formation.

3 An alveolar formation in which alveoli of varying sizes are found. Many of these alveoli may be formed by the dilatation of the duct-like structures mentioned. They are sometimes empty and some times contain a homogeneous material which stains very intensely with eosin or picric acid. In some instances they contain mucin.

4 A type of tissue which appears to consist of interlacing double columns of cells which have split down the middle of the columns. This appearance is produced by papilliferous ingrowths into dilated alveoli or by irregular compression of alveoli.

The nine atypical tumors were omitted from the first group because of the absence of large areas of mucin containing scattered cells which by secondary changes give rise to the so called cartilage. The one resemblance of these tumors to the others was their undoubted epithelial origin. They differed from the typical tumors and from each other in their degree of malignancy and the extent of their secondary changes.

The author draws the following conclusions

1 The so called mixed tumors of the salivary glands are not in reality mixed but entirely epithelial in origin. In most cases they are derived from the ducts of the gland but occasionally they arise from the secreting cells.

2 The mucinous material which is such a prominent feature of most of these tumors is a true secretion of mucin by the tumor cells which is only an exaggeration of a normal function of the gland cells.

3 The tumors do not contain cartilage. In the substance which has been described as cartilage the matrix is formed by a change in the mucin of the tumor whereby it loses its fibrillar appearance and its power of staining deeply with mucicarmine. The cells are epithelial cells.

4 Some of the tumors show varying degrees of malignancy. There is no definite dividing line

between the benign and malignant and some of the more malignant growths may show many of the features typical of the benign type of tumor

J I N KIRKP R I M D

EYE

The N Ate f Hyp t ns on and R tinal
Chang s B t J Ophth 97 489

The history of arteriohypertension and its changes from the viewpoint of the general practitioner. He reports the findings of examinations he made for arterio sclerosis of the retina, especially in the case of patients who consult him with regard to disorders having nothing to do with their visual organs nor with hypertension. The object of these examinations was to study the different stages of the pathological process. He is unable to carry out a complete investigation as is possible in the cases of hospital patients. He examined the urine only for sugar and albumin and called it normal if albumin and sugar were absent and the specific gravity as normal. He did not determine the quantity of urine excreted in 24 hours, make test of kidney efficiency or Wassermann test or examine the elements of the urine microscopically. When examining the eye he noted not only the objective changes but also changes as shown by the electrophthalmoscope. He seldom used a mydriatic. He did not measure the visual acuity nor study the field of vision or the sense of color.

He admits that the results of every examination from the scientific point of view but it was necessary for him to carry out his investigation the very simplest manner because of the impossibility of performing all of the highly technical tests and because it is a handicap on the simple basic examination and careful attention to all abnormalities forth some valuable results.

When he determined the blood pressure the patient sat with the blood pressure mat on the same level as the pulse of the heart. Each patient was examined at least twice at different times.

It was usually necessary to rely entirely on the electroophthalmoscope, the sphygmomanometer and the retin examination of the urine which can be made with ease by the general practitioner.

The arteriosclerosis is palpated. This was not because the pressure stimulated the pulse of palpation but because he believed it very difficult to determine by the means he had at his disposal. Arteriohypertension was due to arterio sclerosis change of tone contraction of the muscular tunica media. The arterio sclerosis of the clinician is different from the arterio sclerosis of the pathological anatomist. The pathologic anatomist measures by the term sclerosis of the tunica intima which corresponds to thetherosclerosis of MacCallum and the arterio sclerosis of English authors to the ultimate form of which either may lead.

From examination of the fundus the following conclusions

1. Sclerosis of the retinal vessels recognized first of all from the loss of transillumination of the

vascular wall. Other signs develop later. In a normal person on the sclera may not be in until very late and even in advanced age when the vessels of other parts of the body are affected by arteriosclerosis may not be present if the blood pressure is normal.

The same to which is the cause of essential hypertension quickly develops arteriosclerotic changes in the retinal vessels even at an early age if the arteriohypertension continues long enough. Its action may then cease and clinically the general vascular system may recover completely but the arteriosclerotic changes in the retinal vessels remain permanently.

3. There is some reason to believe that the toxin of essential hypertension is pre renal in origin but renal retention of arteriosclerotic retinitis are probably caused by different to it. It is probable that there is some intimate connection (endocrine?) between the state of the retina and activity of the kidney.

L. SLIC L. MCCOY M D

EAR

Williamson G S Richards E H and Others
Discussion on Progress of Middle Ear Deafness
Pr Act Soc Med Lond 97 843

From a study of chronic middle ear deafness Williamson reached the conclusion that deafness is due to nervous tachycardia and deformity of the nose has its onset in childhood and is not associated with deafness. He emphasizes that a test for auditory acuity as distinct from deafness is urgently needed.

Richards concluded from a study of hearing tests that the Gelle and Weber tests are difficult to interpret and unreliable.

JAMES C BARRIS M D

Anoult N The Lymphatics of the Ear (Continued)
but let it be lymphatic and papillary
dissection of the lymphatic system 97 69

The lymphatics of the external ear drain into the parotid gland, the mastoid gland and the subparotid gland. Those of the external auditory meatus and the outer surface of the tympanic membrane drain into the superior subparotid gland and the deep parotid gland, the inferior parotid and the sublingual gland. The lymphatics of the cutaneous layer of the inner surface of the tympanic membrane empty into the external auditory meatus. In the fibrous layer some lymphatic vessels run in the handle of the hammer. In the muscular layer the network of lymphatic vessels connects the external meatus with the external auditory meatus through the tympanic membrane. The author is unable to inject any lymphatic vessels in the tympanic cavity.

There are four lymphatic trunks passing from the mucous membrane of the eustachian tube. One of them empties into the subtemporal mastoid gland, the other directly or after being arrested temporarily in the retropharyngeal gland. Another which exists in the middle ear follows the ascending palatine and

empties into the subdigastric glands. A third which also exists in most subjects passes directly through the retrostoid space to the subdigastric glands. The fourth not infrequently empties into the parotid glands through the tympanic network and the lymphatic vessels along the external auditory meatus. There are no lymphatic vessels in the internal ear. The perilymphatic and endolymphatic spaces and fluids take their place. The perilymphatic space communicates with the subarachnoid spaces through the aqueduct of the vestibule in the space which separates the endolymphatic sac from the bone canal through the nerve sheaths and probably through the aqueduct of the cochlea. The endolymphatic space apparently does not have any communication with the subarachnoid spaces.

Inflammations and tumors of the pavilion may cause involvement of the parotid mastoid or sub-stenomastoid glands. In malignant tumors of the pavilion these three groups of glands should be removed. As the external auditory meatus and tympanum do not send any lymphatics to the mastoid group a painful swollen mastoid gland cannot be considered a sign of otitis media or external otitis limited to the meatus; it indicates only an infection of the helix, the anthelix or the navicular fossa.

There is a lymphatic tract which starts from the pavilion of the tube, passes along the tube to the tympanic membrane, traverses the tympanum, follows the external auditory canal and may reach the parotid glands. This explains the phlyctenule of the epidermal layer of the tympanic membrane and the external auditory canal often seen in the course of suppurative or non suppurative otitis. In acute otitis media the course of the lymphatics explains both the painful and swollen preauricular glands and infection and suppuration of the retropharyngeal glands. The connection of the perilymphatic spaces with the subarachnoid spaces described explains how bacteria from the internal ear may invade the arachnoid directly.

AUDREY G MORGAN M.D.

Horne J. The Formation of a Circumscribed Intradural Abscess at the Site of the Saccus Endolymphaticus. *Proc Roy Soc Med Lond* 1927 xx 1868.

The author reports two cases of circumscribed intradural abscess at the site of the saccus endolymphaticus. This lesion is rare. Horne found only two cases reported in a period of nearly thirty years. Such abscesses may be treated surgically.

JAMES C BRASWELL M.D.

Portmann G. Vertigo. Surgical Treatment by Opening the Saccus Endolymphaticus. *Arch Otolaryngol* 1927 1 309.

Portmann reports the practical results of his research on the saccus endolymphaticus which was carried out over a period of eight years.

The saccus lies in a space formed in the dura mater where it is divided into two layers. The normal func-

tion of the labyrinth is influenced by any change or modification of the tension of the cerebrospinal fluid. The increasing pressure produced through the saccus endolymphaticus and the membranous labyrinth may provoke the Meniere syndrome and the increase of intralabyrinthine pressure may have an endolabyrinthine cause.

In glaucoma the intra ocular tension is relieved by puncture of the cornea. In some cases of unilar glaucoma with serous labyrinthitis it seems logical to make a decompression particularly if medical treatment has failed.

The operative technique and the surgical anatomy are described in detail. In the operation devised by Portmann the first step consists in reaching the fossa endolymphatica and localizing the saccus. The saccus is situated in the triangle formed by a line extending to the lower surface of the antrum above the aqueductus fallopian in front and the lateral sinus at the back. The surface of the mastoid is exposed and trephined at a lower level than that of the usual opening for mastoiditis. This square of approach aims to reach the lateral sinus without opening the antrum. After exposure of the bony wall of the sinus the dura covering the posterior surface of the petrous bone is separated to a distance of 3 or 4 mm. The bony region that represents the most outward part of the fossa endolymphatica is then removed an exploratory puncture of the saccus is made and paracentesis is done. The retroauricular wound is sutured around a small gauze drain.

W. M. PATON M.D.

NOSE AND SINUSES

Guthrie D. and Dott N. On the Occurrence of Brain Tissue within the Nose, the So Called Nasal Glioma. *Proc Roy Soc Med Lond* 1927 749.

A differentiation is made between normal glial tissue in the nose due to an embryonic rest and neoplastic gliomatous tissue which has eroded through the cribriform plate. The authors report a case of erosion of the cribriform plate by a spongioblastic frontal glioma. The embryonic rests which formencephalocles are not unusual but this is the only case of the kind that they have been able to find on record.

In cases of long standing intracranial tension cerebral hernia into the minute natural spaces of the dura are common. The authors believe that if these hernia become involved in a neoplastic process the latter will almost certainly penetrate the dura and by pressure erode the cribriform plate into the nose.

ERIC OLDBERG M.D.

Rebattu J. and Proby H. Experimental Ozena (Ozena experimental). *1 ch internat de laryngol* 1927 xxxiii 804.

The authors report the case of a man forty years old who was wounded by a grenade and subsequently developed a unilateral atrophic rhinitis. The roentgen picture suggested an injury of the sphenopala-

The postoperative care should be simple. The diet should consist of milk or a mixture of milk and water. Washes and sprays are not advisable.

GRIVY TURNER reviews his personal experience illustrating his report with drawings showing the condition in various cases and supplementing it with statistical tables. He favors the one stage operation. He avoids free lateral incisions and uses short ones only when they are strictly needed. Dental treatment has proved a useful adjunct to operation. Speech training is most valuable when it is begun soon after the operation.

Secondary operations, the postoperative care and operations on adults are discussed.

ADDISON states that in his opinion the Langenbeck operation gives the best results.

CAU describes the operation of muscular suture in detail. Total non union occurred in only 2 per cent of the cases.

PITTS discusses the cleft palate operation from the viewpoint of the dental surgeon. He believes that the Brophy operation causes considerable distortion of the dental arch. From the standpoint of comfort surgical treatment is much better than a prosthetic appliance. Both the flap method of Lane and the Langenbeck operation cause some distortion of the dental arch. There is often a marked discrepancy between the anatomical and functional result. Surgical and dental method should be regarded as complementary rather than antagonistic.

NICHOL reports upon eighty six cases which he divided into three groups according to the type of operation performed.

MACMILLON discusses speech training.

GILLIES in discussing secondary operations states that conditions for speech are at their worst when the soft palate is so far forward that it cannot be of aid in the closure of the oronasal passage. As a result of the approximation of the maxillæ the upper lip and nose are situated too far back. Gillie suggests methods for the correction of the dental malformations.

LUGGE states that the best age for the first operation is during the second or third month of life.

FRIE emphasizes the importance of a functional soft palate. If the hard palate can be closed without bringing the soft palate forward this should be done. In other cases a plate should be used to correct the defect.

Valuable contributions to the discussion are made also by GRZYDER, WARD, HIGGINS, WARDELL and BROPHY. W. M. PATON, M.D.

Bunnell, S. Cleft Palate Repair—The Cause of Failure in Infants and Its Prevention. *S. 78* (J. Obst. 1927, 1) 530.

The main cause of failure in the repair of cleft palate especially in infants is the sucking action of the tongue. Before a method of preventing this suction action was devised the palate often partially broke down in the first or second week following its repair. The break occurred in either the

middle or the posterior half. It resulted in scarring, contracture and the necessity for further operation and when the palate was finally closed it was found to be short and unsatisfactory.

The sucking power of infants averages 152 mm Hg while that of adults averages 440 mm Hg. By the author's method closure of the palate is possible at a very early age.

Soon after the infant's birth the alveolar processes are aligned with wires and plates. The lip is repaired when the infant is between two and four weeks of age. The alignment of the alveolar processes is a simple procedure but the lip operation is associated with the danger of fatal hemorrhage especially if there is malnutrition. To prevent such hemorrhage the intravenous administration of 50 cc. of the mother's blood is of value. The palate is closed in two stages from one to three months after the operation on the lip.

In the first stage flaps approximating each other in the midline are elevated and then replaced for a week. Lateral freeing incisions are avoided if possible and are never carried backward through the muscles and vessels of the soft palate. At the time of this operation a wax impression is made of the alveolar arch.

During the interval of one week between the first and second stages of the operation a false palate of sheet silver is made in a dental laboratory. Wires are brought down and out from the lateral incisors and are later bent to fit the face. The silver is perforated at numerous points. In the second stage of the operation in which the palate is closed a plaster cap with hooks is applied to the patient's head. The false palate is put in the mouth against the upper alveolus and the wires are brought out of the mouth back across the cheek, bent up around the hooks in the plaster cap and then fastened with rubber bands so that the false palate will be held against the alveolus by gentle pressure. Plaster casts are put on the arms.

After this procedure the mouth is kept clean and the false palate is cleaned once a day by lowering it a little. The patient is fed through a tube in the pharynx. The stitches are removed on the twelfth day under anesthesia but the false palate is left in two days longer. JAMES B. BROWN, M.D.

Fitzwilliams, D. C. L. The Treatment of Cancer of the Tongue. *L. med.* 1917, 7, 600, 907.

Cancer of the tongue has a rapid growth and a poor prognosis. It commonly starts as a simple ulcer fissure or other benign lesion. Leukoplakia is a frequent precursor. The benign lesions should receive early and effective treatment.

The spread of the cancer is downward into the lymphatics which run along the muscular fibers. The spread of the lesion is not apparent from the surface but is extremely rapid. The early involvement of the neck glands is due to the active muscular contractions of the tongue driving the cancer cells along the lymph channels to the glands.

Operative treatment is most effective when the primary focus is removed first. The glands should be attacked later. In the primary operation the initial anaesthesia is maintained by means of a laryngotomy tube passed through a stab wound in the cricothyroid membrane. The tongue is controlled by stout silk threads passed through it. The mucous membrane is divided as far back as the anterior pillar of the fauces and the styloglossus muscles are divided. The hypoglossus muscle put on the stretch by traction on the tongue is divided and the exposed lingual artery is ligated. Adequate mucous membrane flaps are fashioned; the growth is removed and the flaps are sutured over the raw stump. Recovery is usually rapid.

Two or three weeks later the entire gland bearing fascia at the side of the neck together with the submaxillary gland and sternomastoid muscle is removed. Preliminary to this dissection the external carotid artery is divided between two ligatures. The glands must be carefully protected from injury.

The primary growth can be attacked also with radium. The most effective method is the implantation into the lesion of small platinum needles containing radium. These should be left in for a week. In some cases a second dose may be necessary. The glands may be treated with radium implants or radium blocks but this treatment is often followed by recurrence. Diathermy is usually to be condemned on account of the resultant necrosis and sepsis but in some cases it is invaluable.

In the author's opinion the treatment he has outlined is much superior to the methods in common use.

W. M. PATTERSON, M.D.

NECK

Dunhill T. P. Toxic Goiter. The Place of Surgery in Its Treatment. *B. I. M. J.* 97, 77.
 Murray C. R. Toxic Goiter. Indications for Surgical Treatment. *B. I. M. J.* 97, 774.

DUNHILL. Clinically the two types of toxic goiter—primary and secondary—are sometimes indistinguishable.

They depend upon whether the toxicity has developed in a previously normal or a previously diseased gland. The exciting cause may be a physical factor such as a focal infection or iodine deficiency or a psychical factor. In the cases of patients who are economically unable to undergo a prolonged rest cure and in cases with certain complications which do not respond favorably to medical treatment—such as heart failure, persistent glycosuria, severe dropsy, and insanity—operation may be necessary regardless of the type of the goiter.

Anaesthesia may be induced with nitrous oxide and oxygen by the intratracheal method or by rectal ether. When the condition is complicated by myocardial failure, local anaesthesia is superior to general anaesthesia. Whenever feasible the operation should be done in one stage. If this is impossible the patient should be informed of the fact before the first operation so that he will not be disappointed when the second operation is necessary.

MURRAY. Toxic goiters may be divided into two groups: (1) primary toxic goiter including (a) simple toxic goiter and (b) exophthalmic goiter and (2) secondary toxic goiter including (a) simple secondary toxic goiter (b) toxic adenoma and (c) secondary toxic goiter.

Primary toxic goiter is usually amenable to medical treatment unless complications develop. In primary exophthalmic goiter surgery should be instituted if six months of medical treatment fail to bring about improvement or if early signs of cardiac failure are noted.

In secondary toxic goiter medical treatment is apt to be discouraging even if the toxicity subsides the goiter still remains. If three months of medical treatment fail to cause improvement operation is indicated.

In toxic adenoma operation is usually advisable. Medical treatment may give some relief but as a rule the improvement is of short duration. If operation is refused X-ray treatment should be given.

Secondary exophthalmic goiter is rare. In this condition operation should be done as soon as the symptoms are well defined. Medical treatment is disappointing and early myocardial failure is frequent.

Toxic symptoms may develop when a cyst or an adenoma become infected. In such cases the toxemia subsides promptly when the pus is evacuated.

F. S. MOSELEY, M.D.

Eberts E. M. and Fitzgibbon R. R. Malignant Disease of the Thyroid Gland. *I. S. S. 97*
 1, 55.

The authors review the literature on malignant disease of the thyroid gland since Wilson's report in 192. Wilson listed 90 cases to the 1920 already reported and the authors have found in the literature a total of 432 cases reported since Wilson's article. With 14 new cases reported from the Montreal General Hospital the total number of cases on record is 1,876.

In the diagnosis of malignant thyroid the most difficult clinical differentiation is that between thyroid malignancy and chronic diffuse thyroiditis. In the latter there is a dense uniformly hard swelling of moderate size which is usually unilateral at first but soon involves the entire gland. The surface of the gland remains smooth and the normal shape is retained. The patient shows an early axillary pain (myxoedema).

In the treatment of thyroid malignancy little hope is offered by operation alone. Operation should be followed by radiation. Radium alone gives results which compare unfavorably with those obtained by other methods.

Early operation is desirable. The best results are obtained in cases which are operated upon under suspicion of malignancy and in those in which the malignancy is first discovered at operation.

I. L. W. SEXTON, M.D.

Portmann U V Radiation Therapy in Malignant Diseases of the Thyroid Gland *J Int M* 135 1927 XXXV 1131

The clinical diagnosis of malignant disease of the thyroid gland was difficult in at least half of the cases in the author's series because small encapsulated neoplasms cannot be palpated. The most important clinical evidences of malignant degeneration are the sudden rapid growth of a pre-existing goiter and the recurrence of thyroid enlargement.

When the growth has passed outside the gland capsule as manifested by fixation of the tumor in involvement of the lymph nodes or metastases the condition is inoperable.

Of the author's patients who were treated by operation alone only 9 per cent were cured and only 18 per cent were living one year or longer after the operation.

Supplementing operative treatment with irradiation brought about a distinct improvement in the results. Of the patients treated by operation and roentgen ray irradiation combined 18 per cent were clinically cured and a like number are living and clinically well from four to five years after the treatment. This indicates the possibility of effecting a cure in 36.5 per cent of cases treated by the combined method.

Of twenty-two patients treated by roentgen irradiation alone operation being impossible 25 per cent are living from two to three years after the treatment, a fact suggesting that some of these neoplasms are susceptible to irradiation.

Of all the patients treated and untreated 28.3 per cent are living more than one year and 14.4 per cent more than three years since they first came under observation. Of the patients who could be treated 37.6 per cent are living more than one year, 18.8 are living more than three years and 1.8 per cent are living five or more years since treatment was instituted.

It appears that the best results are obtained by operation followed by irradiation since 26 per

cent of the patients who have remained cured for five years and 36.6 per cent of those who have survived for three years were treated in this manner.

The final results indicate the advisability of applying irradiation in every case of malignant disease of the thyroid gland.

The explanation for this observation may lie in the fact that apparently the cellular structures of many malignant growths of the thyroid are sensitive to irradiation because of their fetal or embryonic origin and because metastasis must take place through small blood vessels or lymphatics which are also comparatively susceptible to irradiation.

HOWARD A. MCKNIGHT M.D.

Clerf L H Laryngeal Complications of Irradiation *Arch Otol Rhinol* 1927 VI 338

With regard to untoward effects of irradiation of the neck, Clerf discusses the problems of tissue sensitivity, individual susceptibility, cumulative effect and filtration. In cases of recurring papillomata of the larynx in children irradiation has no place. It does not cure such tumors nor inhibit their growth. The indiscriminate use of irradiation in cases of cancer of the larynx is to be discouraged. In the treatment of operable laryngeal cancer the advice of both the surgeon and the radiologist must be taken into consideration.

HOWARD A. MCKNIGHT M.D.

Litvak S A Case in Which Skin Was Grafted in the Laryngeal Cavity by the Thiersch Method (Ein Fall von Hauttransplantation nach Thiersch in die Larynxhöhle) *Vestnik khir i gog. i tsykhobolei* 1926 VI 176

This is a brief report of the successful grafting of skin in the laryngeal cavity by the Thiersch method. The patient was a nine-year-old girl who had been subjected to the Mangoldt operation for laryngeal stenosis. After excision of the scar a large mucous membrane defect was covered with the transplant. Recovery resulted in the course of a month.

ALIPOV (Z)

SURGERY OF THE NERVOUS SYSTEM

BRAIN AND ITS COVERINGS CRANIAL NERVES

(Crant F C Chronic Subdural Hematoma 1
S g 71 48)

Crant reports three cases of chronic subdural hematoma to show how comparatively trivial trauma may result in serious intracranial conditions.

Case 1 was that of a man of fifty-two years who fell down stairs and sustained a fracture of the skull after the accident. He did not consider seriously injured and returned to work after ten days. A week later headache developed and he followed by mental impairment, irritability, aphasia and thickened speech. Within a week after the injury the patient was totally incontinent.

Examination revealed disorientation, severe aphasia, semi-purposeful blurring of the optical illusion, giddiness, the right eyelids, a slight lateral homonymous hemiparesis and partial right hemiplegia.

Röntgenogram of the skull showed a fracture of the left temporal parietal occipital region. When the postoperative flap was turned over the area an old extensive subdural blood clot as found. Following the removal of the clot the patient recovered and returned to his work after three weeks.

Case 2 as that of a woman of sixty-five years who fell from a ladder striking the left occiput on the pavement. It was not known whether she was rendered unconscious or not. She awakened the next day but on the evening day after the injury she developed headache and dizziness. These symptoms persisted but she continued with her work for a month. At the end of the time it was noted that she had a right facial palsy, was deaf. About six weeks after the fall she began to omit became stuporous and developed speech defects.

Examination revealed profound stupor, motor aphasia, aphasia, complete right hemiplegia. The knee jerk was reflexed on the right side and increased on the left side. On the left side there was a positive Babinski reaction. Röntgenogram of the skull revealed a fracture of the Lumbopuncture showed a clear fluid under normal pressure. The Queckenstedt test showed a normal result.

Conservative treatment was decided upon at first but later in the day operation was performed because the patient showed a downward trend. As in Case 1 a large organized blood clot was found and removed. The patient recovered after the operation and was still well three years later.

Case 3 as that of a man of forty-three years of age who was knocked down and battered by heavy waves while bathing in the surf. He was slightly dizzy after the accident and in an hour developed

a severe temporal headache. During the next hour his vision became blurred and finally his left eye became blind and there was marked loss of vision in the right eye. By the next morning however his sight had returned and after a week he resumed his work with only some headache and mental dullness as sequelae of the injury. About three weeks after the injury following severe mental strain he developed motor aphasia and a semi-stupor. Convulsions then occurred in the right side of the face and the right arm and he soon became stuporous.

The findings of the physical examination were about the same as those made in Case 1 and 2. Lenient galvanization in the left temporoparietal region. Exploration revealed a large clot covering the entire left side of the brain. Over 6 oz of clot were removed. The dura was greatly thickened whereas in Case 1 and 2 it showed little change. Convulsions ceased as stormy but the patient went home five weeks after the operation and returned to work at the end of three months. Soon thereafter he had a Jacksonian attack on the right side but recovered in a few hours. Later he had a transient aphasia for an hour or so but aside from being inattentive he seemed to be fairly normal.

The pathology of chronic subdural hematoma is obscure. Various descriptions in 1857 is still generally accepted. The hemorrhage is strictly subdural extrarachnoid and probably not a simple mass of hemorrhage but a slowly progressive transformation from small vessels with more or less organization intermingled with fresh extensions of the blood.

Cushing and Putnam have called attention to the fact that in the subdural clots of traumatic origin the area of the clot next to the dura is more dense than in clots of chronic inflammatory conditions and is composed of organizing granulation tissue with large methemoglobin spaces containing blood and fibrous in which appear to anastomose with each other and with the capillaries.

The clinical picture is similar whatever the pathological change. There is usually a fairly long latent interval followed by the slow development of signs of intracranial pressure and a rather abrupt onset of severe focal symptoms. Remissions are frequent.

The treatment is the same in all cases viz immediate operation and removal of the clot. In some cases decompression has been accomplished through a trephine opening and aspiration on has been done with a biconcave. At the time it may be necessary to protect the dura of the other side to relieve bilateral lesions. Postoperative edema is sometimes prevented by drainage or the use of hypertonic solutions during the critical period. On the whole the end results are satisfactory. A. R. S. CRAWFORD M.D.

SPINAL CORD AND ITS COVERINGS

Bernard A. Hermange M. and Delcours J. A. Case of Medullary Compression by Primary Tuberculous Cervical Pachymeningitis (Un cas de compression médullaire par pachyméningite cervicale tuberculeuse primitive) *Bull et m. Soc. méd. d. hôp. de Par.* 1927 *xxviii* 1277

The authors report the case of a patient forty eight years old who experienced two epileptiform attacks followed by the rapid development of a spastic paraplegia which later tended to become flaccid. Lipiodol revealed obstruction between the sixth and seventh cervical vertebrae. Laminectomy was done with resultant fatal syncope.

Autopsy revealed a localized internal tuberculous pachymeningitis with syringomyelic cavities due to compression myelomalacia. The upper end of the lesion corresponded closely to the level of the obstruction to the lipiodol and was somewhat higher than the upper limits of the sensory disturbance. In hypertrophic spinal pachymeningitis the upper limit of sensory disturbance may be misleading as it localizes only the area of medullary softening.

Primary tuberculous pachymeningitis without involvement of the vertebrae is rare. Not more than a dozen cases have been reported. As a rule the tuberculous nature of a pachymeningitis cannot be diagnosed clinically and may be suspected only when a syndrome of medullary compression and a hypertrophic cervical pachymeningitis appear in a non syphilitic patient who presents visceral evidences of tuberculosis.

LEO M. ZIMMERMAN M.D.

PERIPHERAL NERVES

Perera A. Anatomical Anomalies of the Phrenic Nerve and Their Influence on the Effects of Resection in Pulmonary Tuberculosis (Anomalías anatómicas del frenico y su influencia en los efectos de su resección por tuberculosis pulmonar) *Prog. de la clin. Madrid* 1927 *xx* 335

Section of the phrenic nerve results in paralysis and elevation of the diaphragm and limitation of respiratory activity on the side on which it is done. Its favorable effects upon healing are therefore similar to those of thoracoplasty.

The operation is rendered difficult chiefly by anatomical anomalies. In some cases it may be incomplete because of the presence of anomalous branches of the phrenic nerve or its results may be interfered with by adhesions. Traction should be exerted on the nerve trunk and the section done at the lower extremity. The subclavian branch should be destroyed by dissection. A search should always be made for an accessory phrenic nerve.

Contrary to the general belief phrenicectomy is not followed by appreciable symptoms unless the filaments of the vagus have been injured.

WILLIAM R. MEEZER M.D.

Desgouttes L. and Denis R. Delayed Paralysis of the Ulnar Nerve Following Fractures of the External Condyle of the Humerus (Les paralysies tardives du cubital à la suite des fractures du condyle externe de l'humérus) *Presse méd. Par.* 1927 *xxx* 868

The case reported was that of a girl of eighteen years who in the course of a year developed atrophy of the intrinsic muscles of the left hand. All movements of the hand were preserved but strength was reduced and the hand felt clumsy. At the elbow there was a marked valgus angulation.

A diagnosis of retarded ulnar paralysis consecutive to a fracture at the elbow was made. At the age of three years the patient had had a severe injury at the elbow but received no medical attention for it. A roentgenogram made by the authors showed a marked displacement upward of the external condyle.

At operation the nerve was found thick, hyperemic and flattened where it passed through the ulnar groove. It was displaced from the ulnar groove to the anterior surface of the forearm and fixed under a flap of fascia. Rapid recovery followed.

The theory of pathogenesis found most acceptable by the authors is that of Destot. Destot demonstrated that the nerve suffers no damage from deformity in valgus alone but as the power of extension is recovered the olecranon encroaches more and more on the ulnar groove and a neuritis results from repeated pinching of the nerve.

ALBERT F. DEGROAT M.D.

SURGERY OF THE CHEST

CHEST WALL AND BREAST

Finzi N S and Ottles Discussion on X R y
and Radium in the Treatment of Cancer of
the Breast. *J. M. J.* 97, 78

Cancer of the breast spreads first by the lymphatics and later by the blood stream. The fact that cancer cells can be traced along the lymphatic channels seems to show that it is the cells themselves that spread the disease. The cells of normal tissues do not appear to enter the lymphatics.

The lymphatics of the breast pass mainly into the pectoral group of axillary gland and in some instances directly to the subclavicular and intercostal spaces. These areas must therefore receive primary attention in treatment with radium or the roentgen rays.

Radium rays are much more penetrating and seem to exert a more marked effect on carcinoma than X rays but may cause injury to the underlying lung.

With the roentgen rays the use of a glancing method will prevent such damage to a large extent. The authors describe this method in detail.

As compared with the X-rays external applica-
tion of radium has the advantage of greater pene-
tration into a morbid substance and multiple applica-
tion of series of local fields and continuous applica-
tion. Therefore the advantages are the difficulty of
administering radium even in a large area and of
avoiding injury to a large field. Radium treatment may
be given also by bringing a number of radium con-
tainers in the tissue.

The result obtained by the use of either radium or the X rays may be summed up by stating that palliation and prolongation of life are the rule and cure is the exception.

When a case is not too far advanced radium seems to give better results than the X rays

Armani I Roentgen Su gical T e t nent of
Cancer of the Breast (C l ul t tt
mo t l h ig ll d lla m mm ll)
1 t t p 2 2 \ 93

The author quotes statistics from a number of hospitals indicating that the mortality from cancer is constantly increasing. Next to cancer of the uterine cervix, the most frequent form of cancer in women, statistics show that at least temporary recovery has been obtained in a fair percentage of early cases but that in late cases the results have been poor. Statistics for cases in which radiotherapy has been associated with surgery indicate that careful roentgen treatment improves the results of surgery.

The results so far indicate that the method of radiotherapy must be carefully selected in each case there is no single technique that can be applied in all cases. The patient should be examined by the roentgenologist in collaboration with the surgeon and also if possible with the histologist and the method of treatment elected should be based upon the combined judgment of all. Patients in poor general condition should not be irradiated. Excessively large doses or too long continued treatment are contraindicated. Too much should not be expected from any special technique but on the other hand there is no reason for a pessimistic rejection of all methods.

In case of operable cancer of the breast irradiation in hospital to the special case should be given if the patient is in good general condition. In operable cases the best results are obtained by moderate postoperative irradiation. Though autogenous percutaneous irradiation seems to yield the best results it should be given only when recommended by the surgeon. In cases of recurrence irradiation seems to give better results than does another operation.

Luhm nn K Postope ati e Roentgen Irrad a
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M mm r m n l i f T chn k) B t k l
Cf o2 ex 544

In the comparison of statistics regarding the result of treatment Steinthal's classification of carcinomata of the breast is of practical value. In Jung's scheme an erroneous classification of benign cases cannot be avoided. As a criterion of remission after postoperative irradiation the percentages of the Steinthal II group should be used.

In seventy five cases operated upon and irradiated
thirteen years ago, and fifty four cases so treated five
years ago free from recurrence was found as follows

P m	V ee	I l f l m	II		II b		II		II - e	
			N		N	e	N		N	e
Ti	ee		8	3 3	4	37 8		0	4	38
F	s		4		7	4			9	9

Th n n irradiated cases treated in the same clinic cannot be compared as more than a third of the patients could not be traced.

As compared with the statistics of Dietrich and Frangenberg, which showed three year survival in the Steinthal II group in 30 per cent of the cases in

foreign countries and in 55 per cent of those treated in Germany, the results obtained in the Goettingen Clinic by irradiation show an improvement of from 8.7 to 13.2 per cent.

In every case the carcinoma dose was given at one time and usually within a period of fourteen days a large field including the axillary and infraclavicular fossae was irradiated with a skin target distance of from 40 to 50 cm. A tube field including the supraclavicular fossa was irradiated at a distance of 3 cm or more and a posterior field corresponding to the thoracic field was treated. Each field was given from 100 to 110 per cent of the skin erythema dose with filtration by 1 mm of copper and 1 mm of aluminum. This treatment was not repeated before eight weeks.

In numerous secondary irradiations telangiectases occurred four times and a small roentgen ulcer developed twice. Injury of the lungs was not evident either subjectively or objectively.

As carcinomatous glands may be present in spite of negative findings on examination cases in the Steinthal I group should also be irradiated. Of the patients in this group 83.3 per cent were free from recurrence after three years and 77.7 per cent were free from recurrence after a period of five years.

HINTZ (Z)

TRACHEA LUNGS AND PLEURA

Ochsner A. and Nesbit W. Pulmonary Abscess Following Tonsillectomy. Preliminary Report. *Arch. Otolaryngol.* 1927 vi 330.

When tonsillectomy is performed under anaesthesia some of the material that enters the pharynx during the operation may be aspirated. Whether an abscess of the lung develops or not depends on several factors, most important of which are the character of the material aspirated and the protective mechanism of the cough reflex.

In the authors' opinion aspiration occurs as frequently during tonsillectomy performed under local anaesthesia as during those performed under general anaesthesia.

That a pulmonary abscess following tonsillectomy may be the result of the passing of an infected embolus from the vessels of the neck to the lung has been shown by a few isolated clinical cases in which multiple pulmonary abscesses were demonstrated.

One of the most convincing proofs in favor of the aspiration theory of lung abscess is the invariable existence of a communication between the abscess cavity and a bronchus. By a pathological study of ten cases of pulmonary abscess following tonsillectomy, Ochsner demonstrated that the abscess cavity is a direct continuation of a bronchus.

The mass of evidence reviewed indicates that the most common mode of infection is aspiration into the tracheobronchial tree when the protective reflexes are abolished. Under general anaesthesia these reflexes are abolished; under local anaesthesia they are supposedly not abolished. The authors

believe that their observations supply the evidence necessary for support of the aspiration theory. They have proved that the introduction of only a 0.5 per cent procaine solution into the peritoneal tissues abolishes certain protective reflexes of the respiratory tract.

HOWARD A. MCKNIGHT, M.D.

Pierston P. H. Non Tuberculous Pulmonary Suppuration. *California & West Med.* 1927 xvii 51.

Pierston reports thirty cases of non tuberculous pulmonary suppuration to clarify the syndrome of pulmonary abscess, bronchiectasis and chronic pneumonia which for the past decade has been confused with that of pulmonary tuberculosis.

In the cases of pulmonary abscess due to the aspiration of foreign material the onset was usually gradual with fever, malaise and an unproductive cough. After a period of from twelve to fifteen days chills and sweats were added to the picture. The symptoms persisted until the abscess ruptured. In cases due to anaerobic bacteria there was often a latent period of from ten days to a fortnight.

In cases in which the condition was the result of embolism following an operation the onset was sudden with sharp pain in the chest followed by fever and an unproductive cough. After a period of from ten days to two weeks the abscess usually ruptured.

The development of a pulmonary abscess in bronchopneumonia was indicated by the recurrence of a protracted fever after apparent subsidence of the infection. On account of the danger of producing an empyema the author warns against diagnostic needling in such cases unless there is visible evidence of adhesions between the visceral and parietal pleurae.

In two of the cases reviewed an abscess developed in an upper lobe after a rib fracture.

In the diagnosis of lung abscess a detailed history is often necessary to determine the etiological factor. A careful roentgenographic study is of great value in determining the etiology as well as the location, character and progress of the abscess. Repeated negative examinations of the sputum for tubercle bacilli in cases with considerable purulent expectoration should suggest a pyogenic abscess rather than a tuberculous lesion. The physical signs are often indefinite and meager as compared with those produced by a tuberculous lesion of like extent.

In the cases reviewed the treatment was of two types, medical and surgical. In the medical treatment reliance was placed chiefly on general supportive measures. Few drugs were used. In cases of acute abscess postural treatment was of great value. When medical treatment failed after a trial of from four to six weeks surgical treatment was given. In the absence of adhesions between the pleurae the two stage thoracotomy offered the best results. In all cases in which a foreign body is sus-

pected or known to be present bronchoscopy should be considered

In cases of chronic pneumonia and bronchiectasis an accurate diagnosis is essential for proper treatment. The pathology of the two conditions is described. Roentgenological study after the administration of lipiodol is helpful in distinguishing bronchiectatic cavities and saccular dilatations from diffuse fibrosis. The patient should be prepared by postural drainage of the cavities for at least an hour prior to the administration of the lipiodol.

The essential of medical treatment include a change of residence to a climate that is warm and dry. Local treatment by postural drainage and diathermy are of value. Attention to the general health, artificial or natural sun baths, rest, and a high caloric diet are of great importance. Autogenous vaccine therapy has been found of great value for the relief of the cough and expectoration.

Surgical measures are indicated to eradicate foci of infection. In unilateral conditions which do not improve under medical treatment drainage of the large cavities and Graham's cautery lobectomy offer a hope of cure. Extrapleural thoracoplasty with avulsion of the phrenic nerve is a means of compressing the affected lung. In chronic pneumonia and bronchiectasis as well as pulmonary abscess pneumothorax is associated with the danger of producing a pyopneumothorax.

J. E. IN KIRKPATRICK, M.D.

Hedblom, C. A. The Diagnosis and Treatment of Bronchiectasis. *J. D. M. I.* 971, 384.

The diagnosis of bronchiectasis based on the ordinary clinical observations has often been doubtful as to the distribution of the condition and always incomplete as to its type and extent. By bronchography with the use of a contrast medium the presence, distribution and type of bronchial dilatation may be visualized.

The principles of surgical treatment of bronchiectasis are drainage, compression and excision. Drainage, the treatment of choice in single cavitations and for localized gangrenous extension. The method of pulmonary compression, an artificial pneumothorax, phrenic excision, extrapleural thoracoplasty and pneumolysis.

In early mild cases artificial pneumothorax or temporary paralysis of the phrenic nerve or both are indicated as tentative procedures. In cases of long standing the treatment of choice is phrenic excision and graded extrapleural thoracoplasty. The usual result is marked improvement approaching a symptomatic cure.

On account of the high postoperative mortality and the frequency of residual bronchial fistula, primary lobectomy and graded cautery excisions are not to be recommended. Secondary lobectomy when indicated following thoracoplasty and phrenic excision should prove relatively safe and very effective.

SAMUEL K. IN M.D.

Jennings, J. E. Chronic Empyema. *Ann. S. S.* 97, 13, 616.

Jennings reports two cases of chronic empyema in which the lung was collapsed covered over by a thick pleura and lying back against the spine.

In the first case that of a nineteen year old boy with a history of tuberculosis the first operation was performed after about two years of inadequate drainage and tapping. The first step in the treatment consisted in securing adequate drainage by resecting portions of three ribs. A few weeks later the lung was stripped from its bed and allowed to roll forward. About three months later the chest was again opened and the false membrane stripped from the surface of the lung, the lung was freed a flap of the chest wall under the scapula was mobilized and allowed to drop back and portions of the sixth, seventh, eighth, ninth and tenth ribs were removed to collapse the cavity at the bottom. A small sinus persisted and gave increasingly severe symptoms though its intermittent opening and closing. At operation for the closure of this sinus a bronchial fistula was found. This finally closed after rib resection and muscle implantation.

In the second case decortication was done and the chest closed. Twenty months later a fluctuant opening. The removal of a rib sequestrum found at the bottom of the sinus tract was followed by recovery.

The author emphasizes the importance of the wide flap opening in the chest, all incision of the pleura along the outer edge and liberation of the lung from its bed so that it may come forward. Because of the larger of the lung in stripping the pleura the pleura on the anterior surface of the lung is not touched. The technique is shown in a number of illustrations.

M. L. IN M.D.

Parker, D. W. The Treatment of Empyema in Children by the Closed Method and Suction Drainage. *B. I. M. S. J.* 97, 653.

In the diagnosis of empyema reliance to be placed chiefly on the X-ray and the aspirated needle. The latter may be used without hesitation to determine the presence or absence of pus as well as the type of the infection.

Statistics have shown that empyema is especially serious in the first few years of life regardless of the type of treatment. The mortality is influenced by the character of the infection, the patient's age, and the time of operation. The choice of treatment is a much mooted question. If it prefer the closed method but for a series of 66 cases Ladd and Cutler conclude that except streptococcus infections, rib resection gives more satisfactory immediate and remote results.

The author reports eighteen cases with one death. In his method of treatment a pirated alar done before operation usually, the posterior alar line between the seventh and eighth ribs to determine the character of the exudate. If the fluid

is frank pus thoracotomy is performed at once but if it is serofibrinous or thin and only slightly turbid aspiration alone is done to relieve pressure symptoms and thoracotomy is deferred until the character of the exudate changes

Novocain infiltration anaesthesia was used in all but one of the cases reviewed. An incision from 1 to 1½ in in length was made in the posterior axillary line between the seventh and eighth ribs down to the fascia covering the latissimus dorsi muscle. The fascia of the muscle was then incised in line with the muscle fibers. The muscle was split and the ribs and intercostal space were exposed. The intercostal muscle was then further infiltrated and perforated with forceps or scissors. When pus appeared a 24 to 27 F catheter was introduced through the opening.

Previous to the operation a piece of rubber dam 3 in square was perforated in the middle and drawn over the catheter. The rubber dam was tied around the catheter from 1 to 1½ in from the tip. This made a shield which was plastered to the chest with adhesive tape after closure of the incision. The catheter was further anchored with tape strips.

Pus was then aspirated with a syringe but the aspiration was stopped upon the first sign of discomfort or coughing. After the aspiration a large dressing was applied and the child put to bed in a sitting posture. To obtain air tight drainage the catheter was connected to glass and rubber tubing leading to a jar of water on the floor and the clamp was not removed from the catheter until after the tubing had been placed in the water. With this method no special instruments are required.

Twenty four hours later the chest was irrigated through the catheter every two hours with from 30 to 60 c cm of 1 per cent chlorazone solution. This procedure was continued throughout convalescence. In the author's opinion the solvent action of the Dakin's solution is the most valuable feature of the treatment. The tube should be left in the chest for from fifteen to twenty days.

GEORGE A COLLETT M D

HEART AND PERICARDIUM

Ramond L and Weill Spire R. A Cure of Purulent Pneumococcal Pericarditis by Epigastric Pericardotomy (Guérison d'une péricardite purulente à pneumocoques par péricardotomie épigastrique) *Bull et mém Soc méd d hôp de Par* 1917 *vol* 1163

Paracentesis pericardii is not satisfactory in the treatment of acute purulent pericarditis. As soon as the condition is diagnosed a pericardotomy is indicated. The thoracic approach however has seemed formidable as it places quite a strain on the already very sick patient. The epigastric operation which was recommended by Larnie is simple and easily performed and not nearly so much of a tax on the patient's resistance as the thoracic procedure. In the technique described by the authors an incision is made over the xiphoid process and the latter is resected. The peritoneum is then pushed back, the diaphragm incised, the overlying pericardium opened, the pus evacuated and a soft rubber drain inserted.

In the case reported the patient a woman twenty three years of age had had a left jugular thrombophlebitis secondary to otitis. Following an operation on the mastoid she developed severe abdominal pain, dyspnoea and dullness in the chest. Nothing was revealed by pleural puncture but later the cardiac dullness was found to be increased. Paracentesis of the pericardium yielded 240 c cm of pus which on culture showed pneumococci. Two more such punctures were made in the following ten days but no improvement was noted in the general condition. Finally a pericardotomy was performed by the technique described and 400 c cm of pus were evacuated. The fever and general symptoms then abated gradually, drainage was maintained abundantly for fifteen days but thereafter slowly subsided and two months after the operation it had stopped. Five months later physical and roentgen ray examination failed to show any evidence of pleural or pericardial inflammation.

MICHAEL L MASON M D

SURGERY OF THE ABDOMEN

ABDOMINAL WALL AND PERITONEUM

Paolucci F A Heterologous Benign Hypernephroma in the Iliac Region (Lippincott) 1916

666

The patient whose case reported was a youth eighteen years of age who had an inguinal hernia on the left side for ten years. When the hernial sac was opened its wall was found to be covered entirely by little tumors ranging in size from that of a millet seed to that of a lentil. Microscopic examination of these tumors showed granulation tissue. At about the middle of the posterior wall there was a soft yellow body about the size of a small lentil. On microscopic examination this tumor was found to have the structure of the suprarenal all three layers of the cortex being represented.

This case shows that there may be abundant suprarenal bodies in organs of the urogenital system embryologically to suprarenal tissue and that they may form true tumors. The tumors may be benign as in this case or malignant. (Lippincott) 1916

Babcock W W The Ideal in Herniorrhaphy a New Method Efficient for Direct and Indirect Inguinal Hernia (Singer) 1914

534

A normal incision for inguinal hernia is one which passes transversely directly over the internal inguinal ring from a point just within the semilunar line to a point slightly external to Poupart's ligament.

The thinnest and weakest portion of the external oblique muscle lies over the inguinal canal. If the fibers are separated directly over the canal the edge of the flap or the part best protected in the closure will be the weakest. The best mechanical closure of overlapping edges. The external oblique should be carefully split by a scalpel from without in a direct line between the testis and the widely separated fibers that are found over the hernial canal. The outer surface of the external oblique should not be freed from adherent fascia and must be freed but the under surface should be freely separated by blunt dissection from the underlying internal oblique muscle and from the inner anterior layer of the sheath of the rectus abdominis muscle.

The hernial sac should be approached from within and freed from above downward in the canal and near the internal ring. The cord should not be raised and explored posteriorly. If the sac is not promptly found by retracting the internal oblique and transversalis upward and outward the peritoneum just medial to the internal ring should be exposed and opened and the finger introduced to

examine for any other sac or weakness. Transplantation of the spermatic cord is not essential. If the cord is left alone most of the postoperative complications in the scrotum will be avoided.

The hernial sac should be eliminated especially its funnel-like mouth and the neck of the sac should be transplanted behind a part of the abdominal wall that is strong and thick. Good chromicized catgut is entirely efficient for the deep closure.

Strength in the union of the layers of the abdominal wall all come from the fibrous aponeurotic expansion and not from the structure of the muscle. Below the chief point to be obtained from Lough's ligament is the inguinal canal and the dense fibrous covering of the pubis above and internally from the conjoint tendon and the fibrous inner layer of the anterior sheath of the rectus and the external oblique.

Cluett's Hesselbach's triangle the most troublesome weakness is done by uniting the lateral edge of the inner layer of the anterior sheath of the rectus to the linea fibrous covering of the pecten pubis.

The types of the herniorrhaphy are described in detail and shown by illustration. A thick padding is tacked over the union and supported by a firm spica bandage. The spica bandage should not compress the abdomen above the level of the iliac crest. Children and young robust adults are kept fifteen to twenty days and middle-aged and senile patients not those with much fat, poor musculature and aponeurotic development are kept in bed for eight to ten days. As a rule the patient leaves the hospital from four to ten days after the operation. He is then instructed to report weekly or whenever the spica becomes loose to avoid infection for six weeks and to avoid lifting for three months. At the end of three months he is permitted to do full work.

The author believes that a herniorrhaphy properly performed and followed by proper union will not break down under any condition unless applied later than six weeks after operation.

REBERT M GILL M D

GASTRO INTESTINAL TRACT

Ritvo M and Weiss S Physiological examination of the Gastrointestinal Tract in Roentgen Ray Dose (J. R. T. G. L. 1917)

The roentgen examination of the gastrointestinal tract by means of the opaque meal difficulties are at times encountered in the interpretation of findings because of absence or sluggishness of peristalsis and poor tone or spasm. A duodenal mechanical method which would overcome the condition would therefore be of great assistance. Atripine

and massage have been used but with only partial success

In their attempts to find a more satisfactory means of producing the desired effects the authors carried out experiments with physostigmine. The effort was made to throw light particularly on the following problems: (1) the behavior of the various portions of the alimentary canal under the effect of physostigmine (2) the duration of the effect exerted by the drug on the stomach and intestines (3) the optimal dosage for use as an aid in the roentgen diagnosis of lesions of the gastro intestinal tract (4) the comparative effects of the oral and subcutaneous administration of the drug and (5) the action of the drug in the presence of various pathological conditions involving the gastro intestinal tract

Observations were made both on animals and on human beings and the procedures used and the results obtained are reported in detail

It was found that physostigmine is a valuable agent for increasing peristalsis heightening the tonus of the alimentary canal and overcoming spasm of the stomach. The desired results may be produced without dangerous toxic manifestations. Atropine is an antidote which offsets any untoward symptoms which may occasionally develop. The effects of the drug are practically the same after its oral and its subcutaneous administration. The optimal dose appears to be 1/25 gr given orally. The effect of this dose is sufficiently prolonged to permit adequate roentgenoscopy and the making of roentgenograms. The drug may be used as a diagnostic aid without interference with the routine roentgen ray studies of the alimentary canal. In cases of peptic ulcer carcinoma of the stomach and marked atonicity it was found of great assistance in showing the site and extent of the lesion. In several doubtful cases it was a valuable aid in ruling out the presence of a pathological process.

The contra indications to the use of physostigmine are the presence of an inflammatory process such as appendicitis or peritonitis, severe cardiac disease, pregnancy and intestinal obstruction.

ADOLPH HARTUNG M D

Ivy A C, Droegemueller E H and Meyer J L
The Effect of Experimental Pyloric Stenosis on Gastric Secretion *Arch Int Med* 1927 1:434

The authors studied the effect of pyloric obstruction on gastric secretion in twelve dogs. In all of the animals a Pawlow pouch was made. Stenosis was produced by forming a band about the pyloric sphincter. The degree of stenosis obtained was ascertained by determining fluoroscopically the emptying time before and after the production of the stenosis. The experiments showed that at first there is a decrease of gastric secretion following pyloric obstruction. In four of the dogs pyloric stenosis caused a hypernormal secretion but not an acidity.

This finding confirms the observations of Hambruger and Friedman that in some cases experi-

mental pyloric obstruction causes a hypernormal secretion of gastric juice. The Pawlow pouches must reflect the secretory activity of the stomach.

The authors explain the effect of pyloric stenosis as follows:

1 The gastric retention prolongs mechanical distention and chemical contact.

2 The more complete the hydrolysis in the stomach the greater is the effect of the chyme in the intestine and the more easily are the hydrolytic products in the chyme digested by the pancreatic juice. As a result the intestinal phase of gastric secretion is augmented.

3 As the chyme is more acid more acid stimulation of gastric secretion results and more pancreatic juice is secreted.

4 The slow ejection of chyme from the stomach prolongs the contact in the intestine. The gastric factors are more important than the intestinal. The stenosis also increases the irritability of the local secretory mechanism in the stomach.

Very striking findings are marked hypertrophy and dilatation of the stomach.

HERMAN H HUBER M D

Faber K. Chronic Gastritis. Its Relation to Achylia and Ulcer. *Lancet* 1927 cc iii 90

The stomach may be injured by toxic agents in the blood stream and by agents acting directly on the mucous membrane. The pathological phenomena of gastritis are of two kinds: (1) disturbances of secretion resulting from diffuse lesions of the glandular parenchyma and (2) surface lesions, erosions and ulcerations.

The origin of achylia must therefore be sought in gastritis and that of juxtapyloric ulcers in pyloric gastritis.

SAMUEL KAHN M D

Andrews A F R. The Treatment of Gastric Haemorrhage. *J Am M Ass* 1927 lxxix 1307

The treatment of gastric haemorrhage is based on the following principles:

1 Enforced rest—physical, mental and gastric.
2 Measures favoring coagulation of the blood at the site of the haemorrhage.

3 Cautious restoration of the blood volume.

4 The treatment or prevention of shock.

5 The use of a soothing, non-stimulating diet which combines readily with the gastric juice satisfies thirst and favors coagulation.

6 A complete study of the patient to determine the cause of the haemorrhage in order that suitable treatment may be instituted.

7 The avoidance of surgery during or soon after the haemorrhage.

SAMUEL KAHN M D

Marson J T. Peptic Ulcer. *Northwest Med* 1927 xxxi 489

In 500 cases with gastric symptoms a diagnosis of organic lesion of the stomach or duodenum was made in 1 in every 7. Of those believed to be cases of gastric or duodenal ulcer only 1 in 3 was operated

diseased that a posterior Polya was done. In three cases the stump of the stomach was united to the side of the duodenum according to the Finney-Haberer technique. In ten cases the operation was performed according to the modified Billroth I technique described. It seems better to mobilize the stomach and suture it to the end of the duodenum than to do an extensive mobilization of the duodenum where there are many important structures and the nerve supply is abundant and complicated. Usually the same type of operation can be done also when the ulcer is situated at about the middle of the stomach. If the lesion is along the lesser curvature of the middle of the stomach and if it is not large a V shaped section may be removed but a mid gastric or sleeve resection of the stomach gives a better functional result than a V shaped resection particularly if the latter is rather extensive. Unless the lesion is too near the cardiac end of the stomach Horsley is more and more inclined to do a partial gastrectomy after the modified Billroth I operation when resection is indicated for gastric ulcer.

If a gastric ulcer is removed by local excision a pyloroplasty should be done in addition to give physiological rest by lessening the resistance at the pylorus. If for any reason the modified Billroth I operation cannot be done the Hofmeister type of Billroth II operation is satisfactory.

In cases of duodenal ulcer the problem is quite different. If the ulcer is small not infiltrating and near the pylorus a pyloroplasty with excision of the ulcer is the ideal operation. In the pyloroplasty that Horsley has been performing for several years the incision should never be made further than 1 in into the duodenum but should always be at least twice as long in the stomach as in the duodenum. In this manner the muscle fibers of the strong pyloric canal which is $1\frac{1}{4}$ in in length are divided and physiological rest is given the tissues in this neighborhood. In cases of marked pylorospasm it may be well in addition to follow the procedure of Hughson severing the branches of the vagus nerve along the lesser curvature of the stomach as close to the esophagus as possible.

If the peptic ulcer is further down than the first inch it may be excised as Judd advocates and sutured in a transverse incision. A small pyloroplasty to weaken the pyloric end of the gastric muscles may be done in addition but is not always necessary.

When a duodenal ulcer is extensive and when there are marked adhesions a pyloroplasty of the type described is contra indicated. This pyloroplasty is contra indicated also when there is a strong stenosis but may be used in a very narrow band of stenosis. The pyloroplasty of Finney is more applicable in the presence of adhesions or stenosis but when these are very marked suturing of the diseased tissue is unsatisfactory and a posterior gastro enterostomy will doubtless be better. The held for this physiological pyloroplasty is comparatively limited though definite. Horsley is perform-

ing the operation in fewer cases now than formerly. Since he has ceased suturing the pyloric mucosa his results have been much more satisfactory. If there is marked stenosis or an extensive duodenal ulcer or if there are numerous adhesions a posterior gastro enterostomy is satisfactory. Horsley combines this operation with occlusion of the stomach effected by passing a stout kangaroo tendon around the pyloric end close to the pylorus and tying it just snugly enough to close the lumen but not so tightly as to cause permanent whitening of the tissue.

In peptic ulcer of the jejunum the best treatment is partial gastrectomy with removal of a considerable portion of the acid secreting part of the stomach. There seems to be no reason for merely excising the ulcer and reestablishing the gastro enterostomy.

In conclusion Horsley states that the selection of the proper operation for peptic ulcer depends upon a careful study of the case and of the condition found when the abdomen is opened. In all operative cases postoperative medical treatment should be given by an internist or gastro enterologist for several months.

CARL R. STEINKE, M.D.

Butler H. B. A Case of Complete Gastrectomy for Chronic Ulcer with Observations on the Effect of the Loss of the Stomach on the Physiology of Digestion in Man. *B. J. S. g.* 192, vi, 310.

The patient whose case is reported was a man 42 years of age who had been given medical treatment for a chronic gastric ulcer of 4 years duration. He appeared to make a complete recovery but 8 months later the symptoms recurred and when medical treatment was again instituted it failed to give relief.

On his admission to the hospital the patient was weak and emaciated and the roentgen ray revealed an ulcerous crater high up on the stomach. No hour glass constriction, stenosis or obstruction was found. The findings of the blood examination were erythrocytes 3,200,000, hemoglobin 75 per cent, color index 1, leucocytes 6,560 (polymorpho-nuclears 75 per cent, small lymphocytes 14 per cent, large lymphocytes 9 per cent, eosinophiles 20 per cent). The fractional test meal gave low values for both free and combined acid.

Because of the possibility of carcinoma and the lack of response to medical treatment surgical treatment was regarded as advisable. Operation revealed a large indurated ulcer high up on the posterior wall of the stomach near the cardia. As the condition seemed to be carcinomatous the entire stomach was resected and an anastomosis was made between the esophagus and jejunum by Moynihan's technique.

Pathological examination proved the lesion to be a chronic ulcer with catarrhal changes in the mucosa.

The patient made a good recovery and 4 months later had gained nearly 4 lbs and was feeling well. He was advised to have his teeth extracted in order to remove all possible foci of infection and was put

on 1 dr of dilute hydrochloric acid 3 times a day to remove the causes (infection and achlorhydria) predisposing to the Addisonian anemia which may occur after complete gastrectomy.

Six months after the operation he was examined with regard to the function of the intestinal canal. The stool showed a slight excess of fat (as split fat) but was otherwise normal. The jejunal loop which was used for the anastomosis had dilated and appeared to have taken on the function of the stomach to a certain extent that it is held food for a considerable length of time. Food taken into the jejunum set up a brisk reaction in the intestines. The contents of the jejunum showed a few colonies of bacillus coli streptococci and staphylococci. The bowels moved without cathartics once daily and the patient had normal hunger and appetite.

The findings of the blood examination were erythrocytes 5,433,000; hæmoglobin 90 per cent; color index 0.9; leucocytes 7,500 (polymorpho-nuclears 67 per cent, small lymphocytes 9 per cent, large lymphocytes per cent, eosinophiles per cent, transitionals per cent).

MICHELLE L. MASON, M.D.

Perdoux and Cadenat: Acute Intussusception in the Adult. (English text.) *Ann. Chir. (Paris)* 1918, 9, 71.

The case reported was that of a woman 50 years of age who was seized with sudden abdominal pain about one hour after a light meal. The pain was induced vomiting and although the patient had been constipated for several days preceding the attack, a copious evacuation of the bowels occurred. Thereafter neither fecal matter nor gas was passed per rectum. The general condition remained good.

At examination an enlarged mass was felt in the left iliac fossa. This disappeared from time to time and was thought to be a spastic sigmoid flexure as applied to the abdomen.

The next day the general condition was still good, but no stool had been passed and the mass was constant. A diagnosis of volvulus was made. On the patient's admission to the hospital a vaginal examination revealed a pelvic mass which seemed to be an ovarian cyst situated in its pedicle.

At operation an intussusception of the small bowel was found near the termination of the ileum. Resection followed by side-to-side anastomosis was done. No cause for the condition (tumor, inflammation or Meckel's diverticulum) could be found. Except for a history of salpingitis, no history of previous abdominal trouble could be obtained. Such cases are usually not diagnosed before operation.

MICHELLE L. MASON, M.D.

Judd E. S. Duodenal Ulcer. *Ann. Surg.* 1917, 48, 2.

During the last few years the author has become more and more impressed by the fact that duodenal and gastric ulcer are two separate and distinct

lesions. In a certain proportion of cases the two lesions occur simultaneously. In about the same proportion gastric cancer and duodenal ulcer occur simultaneously, but these two lesions are entirely different. It is not surprising that we have fallen into the habit of considering duodenal and gastric ulcer together as it is only recently that the identity of duodenal ulcer has been recognized.

Some years ago Judd noted that duodenal lesions are not all of the same ulcer type. On further investigation he found that there are at least two distinct lesions, either one of which may be found in cases with a history of chronic peptic ulcer. The first is the true ulcer, which is characterized by congestion and thickening of the surface of the serosa with the formation of more or less scar tissue adhesions and deformity of the duodenum. When the intestine is opened a crater ulcer is seen. The second type of lesion called duodenitis or submucous ulcer is one in which there is congestion and thickening of the serosa but little or no duration. Palpation of the duodenum is negative and when the bowel is opened a lesion of the mucosa can not be found or at most only one or more superficial small mucosal abrasions are revealed.

The indications for operation in cases of chronic dyspepsia due to ulcer of the duodenum depend upon several factors. The length of time the symptoms have been noted should be considered if the symptoms have been present for a long time and especially if the patient has had several periods of good dietary management without relief, operation should not be postponed. If the symptoms have been present for only a short time, non-surgical treatment should be instituted at once as there is plenty of evidence to show that dietary management started before the condition becomes chronic may result in complete relief of symptoms and the healing of the ulcer. The age of the patient should be taken into consideration; a young person with a short history and mild symptoms should be placed on a dietary regimen for a considerable period. In a young case the severity of the symptoms will help to determine the plan to follow, because if there is a constant tendency toward perforation, bleeding or severe gastric disturbances not quickly relieved by diet, operation is indicated. In all cases of duodenal ulcer, diet should be tried before operation is considered. It is a mistake however to continue dietary treatment if nothing is being accomplished by it and if the symptoms return following the least indiscretion.

About 65 per cent of the patients with duodenal ulcer who enter the Mayo Clinic undergo operation. Many duodenal ulcers, even though chronic, run a mild uncomplicated course so that the patient may be treated medically with the idea of eventually resorting to operation if the result of the non-surgical treatment or the co-operation of the patient is unsatisfactory. Duodenal ulcer is a common lesion. Between 1,000 and 1,500 patients thus afflicted are seen in the Mayo Clinic every year.

In Judd's opinion the present enthusiasm for resecting the stomach for duodenal ulcer will not last very long. Gastroenterostomy is not an entirely satisfactory procedure because in a certain percentage of cases it is followed by secondary ulcers. The best type of operation for duodenal ulcer is one that removes the ulcer and places the pyloric sphincter at rest.

Leriche R. The Result After Fourteen Years of a Right Hemicolectomy for Faecal Stasis (14 ans d'attente après l'opération de la stase fécale) *Bull. et mém. Soc. nat. de méd.* 1927 lxx 828

Leriche reports the following case to emphasize a complication of laterolateral anastomosis in colectomy and the small value of colectomy for faecal stasis.

The patient was a woman aged twenty nine years who had had digestive disturbances for seven years and was nervous and poorly nourished. She complained especially of discomfort in the right iliac fossa. Physical examination revealed a flaccid gurgling cæcum. On roentgenoscopy the stomach was seen to be tonic and without retention.

At operation the cæcum was found to be large and flaccid and covered by a typical peritoneal membrane extending to the right flexure. The appendix was removed and the cæcum decreased by half by plication and fixed to the abdominal wall.

After the operation the patient continued to complain but gained 8 kilos. Nine months later she reported marked epigastric discomfort and the X ray showed the bismuth meal to be retained in the cæcum for twenty four hours. At a second operation the greatly distended cæcum, the ascending colon and the transverse colon were resected and a laterolateral ileosigmoidostomy with a button was done. Later an intraperitoneal abscess was drained through a small incision lateral to the healed operative scar. After one month the patient returned home greatly benefited.

Ten years later she reported that for nine years she had suffered from constipation and occasional attacks of acute enteritis with diarrhoea, griping and burning and for six years had had a continuous painful sensation in the right flank with a prominence under the abdominal wall that could be reduced by gentle massage. On X ray examination bismuth did not enter and the left colon was not distended.

Operation under spinal anesthesia revealed in the right iliac fossa a gaseous pocket as large as a toy balloon covered by what appeared to be a congenital membrane with parallel vessels. The membrane was lifted away without difficulty. The gas pocket was the terminal cul-de-sac of the lateral anastomosed loop of small intestine which had distended greatly and contained only gas. The gas pocket was incised and the sac resected.

The patient recovered from the operation and was somewhat relieved but constipation, digestive

disturbances and neurasthenia persisted. Three years later her condition was reported unchanged.

Before 1914 Leriche performed hemicolectomy, plication and anastomoses of different types for stasis but failed to obtain a successful result in any case in which the intestinal disturbance was not purely mechanical. All of the patients who were followed slowly relapsed. After plication of the cæcum the ascending and transverse colon dilated. Antiperistaltic is destroyed the results of an anastomosis or a colectomy.

Leriche advises leaving such cases alone until it has been determined why the mesentery is not fastened why the intestine sometimes distends with out contracting and what digestive gland insufficiency or other factors regulate such phenomena. He believes that faecal stasis is a secondary functional disease the cause of which is outside the intestinal wall.

WALTER C. BURKET, M.D.

Botreau Roussel and Cadenat. Ileal Intussusception in the Adult Caused by a Submucous Fibroleiomyoma. Resection and End to End Anastomosis. Cure (In agnation ileale de l'adulte proluite par un filroleiomyome submucos guéri) *Bull. et mém. Soc. nat. de méd.* 1927 lxx 921

The case reported in this article is the seventh case of intussusception in the adult reported by Botreau Roussel. The patient a man 23 years of age was sent to the hospital with the diagnosis of intestinal obstruction. He appeared toxic and had been suffering from abdominal pain for 5 days during which time neither gas nor fecal matter had been passed. The abdomen was soft and without signs of fluid. On the right side slight peristaltic movements were noted and a semi-soft tumor appeared and disappeared from time to time. A diagnosis of ileal intussusception was made.

At operation a 40 cm. portion of the lower ileum was found to be invaginated but was easily disengaged. A tumor the size of a duck egg was felt. The intestines were violently peristaltic and the invagination was reproduced. The 18 in. segment of bowel involved by the tumor was resected and an end to end anastomosis performed.

The postoperative course was uneventful. The ovoid tumor which measured 6 by 6 cm. and completely filled the lumen of the bowel was attached by a circular base to the contra mesenteric border of the intestine. Histological study showed it to be a fibroleiomyoma.

It was subsequently learned from the patient that he had had vague intermittent intestinal complaints for a year before the operation and attacks of constipation alternating with diarrhoea for about 3 months.

Ipsoma appear to be the most common benign tumors of the small intestine. Next in frequency are the myomata. Most of them are submucous but some are subserous. The subserous tumors may never cause symptoms until they attain considerable

size Submucous tumors give rise to vague dyspeptic symptoms ill defined abdominal pain distention alternating periods of constipation and diarrhoea and sometimes hæmorrhage These benign tumors are never diagnosed before operation

MIC: L MA \ MD

Pratt J P and Fall S L Volvulus of the Cæcum J I W I)

Volvulus of the cæcum occurs only in the presence of some condition due to defect of development such as persistence of the mesenter of the cæcum and ascending colon or rotation with fixation of the cæcum while the liver elevates the large intestine behind the upper mesentery vessels and duodenum the mesenter of the small intestine forming a tunnel through which the transverse colon passes and persistence of the peritoneal mesentery of the ileocolic segment permits mobility ranging from simple cæcum mobility living in the pelvis in the cæcal gutter or motility placed as the plicæ flexure All forms of volvulus to the cæcum The cause of the occurrence of volvulus is directly proportional to the length of the intestine upon which the cæmum hangs

In the majority of cases the condition occurs during young adult life the period of greatest activity It is more common in males than in females Overeating and other dietetic indiscretions especially when followed by exercise play a prominent role in the etiology Abnormal peristaltic activity set up by abuse of the digestive tract act in a minor manner Five or six percent of intestinal obstructions are due to volvulus of the cæcum

The symptoms may be cut abrupt or chronic In general they are the symptoms of intestinal obstruction partial or complete The pathological changes found at operation or autopsy vary from simple to total complete gangrene of the bowel The basis for the changes is the obstruction of the blood supply and the disturbance of the

Raboni G Empyema in Auto Amputated Appendix After Appendectomy (Empyema appendicis post appendicectomy) (Empyema appendicis post appendicectomy) 97 34

The author reports the cases of three patients upon whom he operated after a considerable interval of time following an attack of acute appendicitis and after the patients seemed to have recovered completely In all three cases he found that auto amputation of the appendix had taken place and pus had collected in the closed stump

He thinks it very probable that these suppurations are a continuation in a latent form of the septic process which had caused the auto amputation of the appendix Though there is no clinical suggestion to indicate that the empyema of the stump is a dangerous harm he is of the opinion that such suppurations are dangerous as they may rupture and cause a diffuse or recurrent peritonitis The experience with operation shows auto amputation of an appendix to be rare

A J G M MD

LIVER GALL BLADDER PANCREAS AND SPLEEN

Shaw M C and Rountree L G Disease of the Liver and Further Studies in Experimental Obstructive Jaundice J I W I) 14

The studies reported in this article were made on fifteen dogs The animals were divided into two groups the one in which the common bile duct had been ligated and the other in which cholecystectomy had been performed and ligation of the common bile duct was omitted The studies regarding the effect of biliary obstruction were made before the operation and at intervals of from one to three days during the period following obstruction In two animals cholera tentatively relieved the obstruction by causing reflex peristalsis in the course of the experiment

varied with the duration of the obstruction. With obstruction lasting thirty days or longer there was no immediate change in the degree of bilirubinemia after the relief of the obstruction. Spontaneous closing of the fistula made it possible to study the effect of long continued drainage in such cases.

The changes in the bromsulphalein test were qualitatively the same as those previously reported for the phenoltetrachlorophthalein test. Retention of bromsulphalein in the blood stream of the dogs was not observed until the second or third day following ligation of the common bile duct. The development of distinct retention usually coincided with the first definite appearance of bilirubin in the blood, both occurring from forty-eight to seventy-two hours after the operation. The amount of retention gradually increased, the maximal value being reached the second week. Thereafter the degree to which the bromsulphalein was retained in the blood stream fluctuated somewhat, but in general there was marked and persistent retention of the dye.

When the gall bladder was removed at the time of the ligation of the common bile duct retention of the dye was found within twenty-four hours after the operation. Here too a close parallelism with the degree of retention of bile was observed. The subsequent course of the two series of animals was identical. Retention of the dye persisted following cholecystectomy and re-establishment of biliary drainage.

The bile acids in the blood increased markedly after the production of biliary obstruction. Following ligation of the common bile duct alone this increase was not marked until the second or third day. Maximal values were attained about the second week after obstruction. When the gall bladder was removed at the time of ligation of the common duct the changes in the bile acid reading developed much more rapidly. The increase was marked during the first hour. The amount of retention in the blood gradually became greater, maximal value being attained at the end of the first week. Thereafter there was a gradual return toward normal.

The authors had previously measured the normal rate of removal of injected bile acids from the blood. Comparison of the rates before and after ligation of the common duct showed that bile acid was not only markedly increased by this measure but was also removed at a much slower rate than under normal conditions.

In discussing their results the authors point out that a decrease in the concentration of bilirubin in the blood (in the later stage) is not due to increased renal elimination since less bilirubin is excreted in the urine in obstructive jaundice. They are of the opinion that the production of bilirubin is decreased in consequence of prolonged obstruction and refer to the clinical analogy provided by obstructive jaundice of short duration (as from pancreatic carcinoma) and of long duration (as from stone in the common duct).

The authors agree with other investigators that only a small fraction of the normal amount of bile acids is synthesized by animals with obstructive jaundice. When bile acids are injected after obstruction of the normal pathway of excretion they leave the blood at a much slower rate than normally.

In all of the dogs that survived more than a few weeks biliary cirrhosis developed. Attempts made to relieve the biliary obstruction by cholecystectomy after the first month brought no improvement in the bromsulphalein test of function. The serum bilirubin was little affected by this operation but the content of bile acids rapidly returned toward normal when the obstruction was relieved.

The authors discuss the ascites manifested by two of their animals and cite various explanations of the portal obstruction. The ascites is related to the wide pre-ligament proliferation of connective tissue around the biliary radicle in the portal spaces. The same pathological sequence is observed in man.

Whipple A O Side Tracking Operations for Bile Duct Obstruction 11 51 9 1899 540

In cases of irremovable duct obstruction or irreparable duct injury palliation may be obtained by a side tracking operation to carry the bile into the upper gastrointestinal tract. The main types of lesions in which such a procedure is indicated are (1) new growths of the pancreas or of the common or hepatic duct, (2) chronic inflammatory lesion of the pancreas, and (3) stenosis of the ducts following trauma or inflammation. The following operative method have given good results.

1. Anastomosis between the gall bladder and duodenum or stomach. This is the easiest and most satisfactory of all procedures provided the cystic duct is patent and the obstruction is in the common duct below its junction with the cystic duct. In carcinoma it gives temporary relief and in chronic pancreatitis it results in remarkable improvement for many years.

2. Some form of anastomosis between the common or hepatic duct and the upper gastrointestinal tract. Choledochenterostomy or hepatico-enterostomy or duct reconstruction is to be employed when the gall bladder is absent or the obstruction is above the level of the cystic duct. The lesions requiring these procedures are usually duct stenoses due to injury during cholecystectomy or the result of cholelithiasis. If operative injury to the duct is immediately recognized end-to-end anastomosis is usually easy and stenosis seldom occurs. When such an injury is not recognized at once and there is no biliary fistula a suture anastomosis between the distended duct and the duodenum without the use of a tube is the procedure of choice. If a tube must be used only a partial suture being feasible the tube should not be sutured into the line of anastomosis if it projects for any distance into the duodenum. Attempts to reconstruct a passage between the hepatic duct and the duodenum by means of tubes are seldom permanently satisfactory.

If the patient has an old biliary fistula and especially if previous attempts to re-establish a bile passage have been made the possibility of implanting the external opening of the fistula into the stomach and duodenum must be considered. This has been done successfully in a number of cases. Hepatoenterostomy in which the duodenum or jejunum is sutured to an incision or cautery puncture of the liver has been done but its value is open to doubt.

Whipple reports several cases of side tracking operations.

CHESTER L. CREAN M.D.

Barnes F. L. Acute Pancreatitis Due to a Gall Stone Obstructing the Duct of Wirsung. Report of a Case. *T. St. J. M.* 92 33

When there is a common outlet for the bile and pancreatic ducts acute pancreatitis may be brought on by blockage of the duct of Wirsung allowing the passage of infected bile to the pancreas. It may be caused also by simple obstruction of the pancreatic outlet but under these circumstances the condition is probably more of a chemical nature. Other routes of infection of the pancreas are the blood stream and lymph channels but the latter is questionable.

The author reports a case in which a gall stone obstructed a duct common to the liver and pancreas and caused a flow of bile into the pancreas which resulted in rapid pancreatic necrosis. The patient suffered severely from acute abdominal symptoms but recovered after a laparotomy and the later discharge of a gall stone through the drainage opening.

MARCUS H. HORT M.D.

MISCELLANEOUS

Hertzle A. E. Acute Abdominal Disorders. *Am. J. St. S.* 19 7 11 346

Acute abdominal disorders requiring surgical intervention may be divided into two groups: (1) the perforative group including diseases or trauma of hollow viscera such as the stomach, duodenum, appendix, gall bladder and intestines; and (2) the thrombotic group in which there is no solution of continuity of the visceral wall resulting in an acute general peritonitis such as obtains in the first group but there is injury to the wall due to disturbance of the circulation. The thrombotic group includes such conditions as acute pancreatitis, intestinal obstruction, thrombosis of the mesentery, tumors with twisted pedicles, hemorrhage into a cyst or tumor, and gangrene of the appendix.

In the perforative group of conditions the initial pains are due to the irritation of the bowel wall and peritoneum by the escaped contents. The peritonitis appears later and then dominates the picture. In the thrombotic group the pain is due to the presence of clotted blood; it is the pain of dying tissue. Profound constitutional disturbance is the chief factor in pancreatic intestinal obstruction and any injury in which extravasated blood plays a part. In general the point of maximal pain at the outset indicates the site of the disease.

Abdominal crises must be differentiated from extra-abdominal affections and milder intraperitoneal affections. The best clinical observation possible must be supplemented by observations made after the abdomen is open.

CHARLES F. DUBOIS M.D.

GYNECOLOGY

UTERUS

Haselhorst G Is Hysterography a Safe Method of Examination? (Ist die Hysterographie eine un gefährliche Untersuchungsmethode?) *Zentralbl f Gynaek* 19 7 h 1821

The belief that hysterosalpingography is not an entirely harmless procedure has been supported by two cases recently seen by the author. The first case was that of a twenty-two year old girl with retroflexion of the uterus and a tumor the size of a child's head. At the time of the patient's admission to the hospital her temperature was 37.6 degrees C and a smear from the cervix and urethra was negative for gonococci. Following an examination in which the uterus was injected under light pressure and strict asepsis with 40 per cent iodipin from a Luer syringe there was increasing abdominal pain with slight bleeding and an increase in the temperature to 39.7 degrees C. Laparotomy disclosed a condition of septic irritation and a small quantity of exudate which on culture proved sterile.

The second case was that of a woman twenty-two years old who came for artificial abortion in the second month of pregnancy. Within three days after hysterography the temperature rose to 39.8 degrees C. On the fifth day there were hemorrhages and a fever of 40.5 degrees C. After the expulsion of a fetus 6 cm long and a foul smelling placenta the temperature dropped to 37 degrees C. In sections of the tissue collections of Gram positive cocci and bacilli were found.

The author believes that the severe irritation in the first patient and the abortion of the second were due to the injection of iodipin.

In conclusion the author states that latent foci and bacteria in the cervix, uterus or tubes cannot be demonstrated with certainty in advance by any method as yet known. ODENTHAL (G)

Keller R Unusual Forms of Parametrial Suppuration (Paramétrites suppurrées à évolution particulière) *Gynécologie* 1927 11 387

The author reports seven cases of parametrial abscess.

As a rule parametrial involvement develops early. During the first few days after delivery a vague infiltration may be palpated on one side of the uterus. This evolves into an abscess which is often voluminous and in which fluctuation is easily detected. The formation of the abscess may be rapid but usually requires several weeks or months.

The elevation of temperature is usually moderate. When the infection is due to the bacillus coli there may be no fever at all. For some unexplained reason the lesion occurs more frequently on the

right than the left side. In five of the cases reviewed the abscess was in intimate contact with the pelvic bones and tended to approach the iliac crest.

The complications included perforation of the bladder, rectum and coxofemoral joint. The perforation into the coxofemoral joint was first discovered at autopsy. In one case there was thrombosis of the pelvic veins about the abscess and the right femoral vein.

If the cases are treated reasonably early the prognosis is quite good although an average of four months is needed for recovery.

The treatment indicated is drainage. The author always waits for the development of fluctuation. In the cases reviewed the abscess was opened by an abdominal incision. ALBERT I. DICKROY, MD

Rugano Irrera D Three Cases of Sarcoma Developing in a Fibromyoma of the Body of the Uterus (Tre casi di sarcoma sviluppato in fibromioma del corpo dell'utero) *Arch Ital di chir* 19 7 VIII 538

The author describes the histological pictures of three uterine sarcomata and supplements his description with photomicrographs. From these pictures and a review of the literature he concluded that the sarcomata developed in fibromyomata. He believes that malignant degeneration of pre-existing tissue cells is not possible and that the sarcomata originated from rests of undifferentiated cells scattered in the fibromyomata which were of the same kind as those that had given rise to the fibromyomata and that under the influence of hyalinization or some unknown cause these undifferentiated cells began to multiply indefinitely in an atypical way with destructive characteristics.

ANDREW G. MORGAN, MD

Bonnet P Malignant Cancer of the Body of the Uterus Probably Spread from Cancer of the Cervix (Cancer du corps utérin du type malignien par opagation probable d'un cancer du col) *Lyon chir* 1927 11 408

Challenging the assumption that cancerous involvement of the cervix is invariably secondary to cancer of the body of the uterus, Bonnet reports the following case.

After metrorrhagia persisting for eleven days in a sixty-two year old multipara a diagnosis of cervical cancer was made. Since there was no appreciable invasion of the parametrium the condition was deemed operable but at the last moment radium treatment was given instead. The clinical results were excellent for three months. At the end of that time renewed hemorrhages led the patient to insist upon operation. A preliminary digital examination

used freely. Radiation is not begun until disinfection is complete and the general condition has been improved by dietetic and hygienic methods.

A biopsy specimen is taken from all lesions as the author believes that no harm results when the specimen is removed from the ulcerated area. Also in all cases thorough physical and X-ray examinations of the chest, spine and pelvis are made.

At the outset a definite plan of treatment is adopted. This depends first upon whether only palliation of the local or metastatic lesion is possible, whether a recurrence is present in the vagina and whether the condition is in such an early stage that a permanent cure is possible.

In all cases deep X-ray therapy is used over the pelvis. The author discusses the dosage in detail. The depth dose delivered to the lesion is 60 to 75 per cent. As Bellevue Hospital owns no radium, it obtains emanation upon prescription for cases in which the histopathology, the amount of involvement and the patency of the uterine canal are all favorable for the use of radium.

In the cases reviewed the most common lesion found was the plexiform epithelioma, a transitional form between the basal and the squamous types.

The dose varies according to the amount of local involvement from 4,000 to 7,000 mc hrs. Lesions limited to the cervix receive 4,500 mc hrs. half in the cervical canal and half in the vagina. The applicator used is a modified form of the colpostat designed and used at the Curie Institute in Paris. One millimeter of platinum and 2 mm platinum screens are used respectively in the intra-uterine and vaginal applicators. A thin sheet of aluminum is wrapped about the platinum. The technique of application and the variations in dosage are given in detail.

The irradiation is continued for from four to seven days, the applicators being removed, cleansed and replaced daily. Fluids are given copiously to prevent radiation sickness. Codeine is administered if there is pain. Obstructing masses are treated with seeds or needles or are removed by endothermy, the intra-uterine irradiation being given later. The patient is kept in bed during the treatment. If the temperature rises above 10 degrees F, the irradiation is stopped temporarily.

As this treatment was begun only two years ago it is still too soon to report the results, but the author includes in his article several tables giving the symptoms, a description of the lesion, the patient's present condition and the mortality. He summarizes the main points in his article as follows:

1. Carcinoma of the cervix is not operated upon at Bellevue Hospital.

2. Biopsy is done in every case.

3. The lesion is treated by (a) disinfection of the local area, (b) X-ray therapy of the pelvis, (c) radium therapy of the local lesion and (d) radium puncture and endothermic surgery when necessary.

4. The dosage varies with the histological nature and the extent of the lesion.

5. The treatment is given at once with small doses over long periods of time.

6. High voltage X-rays with heavy filtration and radium emanation in heavily filtered platinum tubes are employed for the specific radiation therapy.

A. JAMES LAFKIN, M.D.

Devere L. The Dangers of Radium Irradiation in the Cure of Uterine Cancers (Les risques de la curethérapie dans le traitement des cancers utérins) *Bull. Soc. d'Et. et de Gynecl. de Paris* 1917, xv, 49.

Although he recognizes the value of radium therapy in the treatment of carcinoma of the uterus, the author believes that in operable cases its results are inferior to those of radical hysterectomy. He has found moreover that the use of radium is not entirely harmless as it may be followed by unfavorable local and distant reactions. The general reactions consist in an elevation of the temperature to as high as 39 degrees C. for three or four days, the result of the absorption of toxins from the neoplastic tissue and disintegrated cells and the retention of septic exudate within the uterus due to obstruction caused by the radium. There may be diarrhea for several days, frequently headache, nausea and vomiting, result from the radium shock.

The local or regional manifestations are bladder and rectal irritation. This is usually evanescent, but the author has known of cases in which proctitis with a bloody mucous discharge persisted for over a year. The ulceration observed in the vaginal wall involves only the mucosa. Perforations of the rectovaginal or vesicovaginal septa occur only in very advanced cases in which radium is contra-indicated. Infection of the uterus may extend to the adnexa or peritoneum and lead to a fatal peritonitis.

The distant reactions are for the most part effects on the blood. There is usually a leucocytosis followed by a leucopenia. Large doses of radium may cause a diminution in the number of leucocytes and a secondary anemia. In several cases reported in the literature and in four cases seen by Devere, radium treatment was followed by embolism.

LEO M. ZIMMERMAN, M.D.

Piccardo T. J. Wertheim's Operation in the Treatment of Cancer of the Cervix (La operación de Wertheim en el tratamiento del cáncer cervicouterino) *Semin. med.* 1927, xiv, 333.

This article is based on seventy-three cases of cancer of the uterine cervix which were operated upon in the period from 1917 to 1927. The case histories are given and the technique of the operation is described in detail with illustrations of each step. The technique was that of the Wertheim operation, but special precautions were observed to prevent infection. Such precautions are particularly important because this operation opens up large areas of tissue to infection.

A preliminary step adopted to prevent infection was curettage and cauterization of the tumor. The

cervix was curetted with a Simon cutting curette and the cavity cauterized. This not only rendered the cervix aseptic but hardened and dried it. Wertheim clamps were then applied to prevent contact of the diseased cervix with the operative wound and the cervix was removed as a closed vessel.

Another special point was the use of a retractor with a double curve to protect the ureters in the different step of the operation. This retractor is shown in an illustration.

Radium may be used from ten to twenty five days before the operation when it is indicated. It does not render the operation any more difficult and it contributes to the immediate success of operative treatment. It is indicated to reduce the size of cancers that are slightly beyond the limit of operability to bring about hamostasis in hemorrhage to effect sterilization in febrile cases and to stimulate in cases with achecia.

The operative accidents in the cervix included laceration of the vagina or the supra vaginal part of the cervix in a few cases, injury of the bladder in two cases and section of the ureters in two cases. Among the postoperative complications were mild bladder fistulas, hystatomas in three cases, eventration in two cases and ureter fistula in two cases. One ureteral fistula closed spontaneously.

In the seventy-three cases there were eight deaths, a mortality of 10.6 per cent. One death was due to paralytic ileus. The causes of death were paralytic ileus, internal hemorrhage, glycosuria and anemia in one case each and postoperative shock in four cases. In the author's opinion the death from glycosuria and the death from anemia were not due to the operation. The operative mortality therefore 8.08 per cent. Infection occurred in only one case—the case of death from paralytic ileus. In the other cases the immediate results were good. In the last thirty-two cases there were no deaths.

UDD G M R M D

Mason J C Total versus Subtotal Abdominal Hysterectomy 1 J Obst & G 97 486

In recent years the more general adoption of total abdominal hysterectomy has been strongly advocated by many leading gynecologists but it should be remembered that these men have had a great deal more experience with the operation than most surgeons. In cases treated by surgeons with less experience subtotal hysterectomy is still advisable as a rule.

A comparison of published results is difficult because some surgeons perform total hysterectomy only in uncomplicated cases in which the uterus is freely movable while others frequently do not remove the cervix, such cases although they strongly advocate removal of the cervix, cited inflammation.

For cases of fibromyoma myomectomy is preferable to more radical procedures during the child

bearing period. If it is necessary to interfere with child bearing as much of the uterus as possible should be preserved in the hope of maintaining menstruation. Coning out the cervical mucosa and thoroughly destroying it by the free use of the cautery is associated with just as much risk as complete removal of the cervix and does not afford quite the same protection against future trouble. The mortality following either operation should be limited to accidental causes.

ADNEXAL AND PERIUTERINE CONDITIONS

Gaves W P Oalan The py J 4 M An 97 1 38

Advance in ovarian therapy in the past twenty five years has been limited by poor preparation of commercial products and difficulty in extracting the pure hormone. Though not fully specific the ovarian extracts ordinarily employed produce favorable responses in certain deficiency syndromes. The best results are obtained in the control of climacteric symptoms, flashes and vasomotor disturbances are usually alleviated. In cases of menstrual deficiency not dependent upon general systemic disease or marked genital hypoplasia resumption of menstruation in case of the flow result with moderate frequency. In essential dysmenorrhea in nervous girls due to functional uterine spasm and associated with nausea, indigestion, headaches and flashes the pain and concomitant symptoms are frequently relieved by ovarian extract. If uterine hypoplasia is absent sterility due to defective ovulation is also occasionally relieved by ovarian therapy.

The author uses ovarian residue almost exclusively and insures its potency by employing a fresh preparation obtained from the manufacturer. Corpus luteum preparations are less stable and occasionally to the absence of follicular elements renders them less potent than extracts from the entire gland.

SUEL A W LFE M D

Japn M Calcaeus Concretions Probably of Origin Sulfuric Urate or Vesicular Calculi (Cetis laipblemeter mlt dscall ete au véc) J d l ed ih 197 x 55

Papin reports the case of a 2 year old woman whom he was called to see because of pyuria and renal pain. Cuneiform inoculation of the urine was positive for tuberculosis as was also the specimen from the right ureter alone. The patient had not menstruated for eighteen months.

X-ray examination revealed numerous shadows of calculi but the exact localization of the stones could not be determined. A roentgenogram made with opaque catheters in place (unfortunately the catheter had entered the left ureter for only a short distance) showed the stones in the bladder field but not along the course of the ureters.

Papin concluded that the stones were in the ovaries and correlated this fact with the absence of

menstruation. A right nephrectomy was performed for the tuberculous kidney. Today, three months after the operation, the patient is well.

MICHAEL I. MASON, M.D.

Keene F. E., Pancoast H. K., and Pendergrass E. P. Carcinoma of the Ovary. *J. Am. M. Ass.* 1927 LXXXV 1053.

The authors report their results in twenty-four cases of carcinoma of the ovary treated with the roentgen ray. All had been previously operated upon as follows: exploratory operation, six; bilateral salpingo-oophorectomy, seven; bilateral salpingo-oophorectomy and hysterectomy, eight; and unilateral salpingo-oophorectomy, three.

Of the six cases in which an exploratory operation was done, ascites and pain were little affected. Five of the patients died within eight months after irradiation and the sixth was rapidly failing five months after the irradiation.

Of the eighteen patients treated by partial or complete excision of the primary growth, only seven are living. Their duration of life since the irradiation has ranged from four months to four years and nine months. Five of them have survived one year or more and are now in excellent health. The duration of life of the eleven who died ranged from two and a half months to forty-eight months. Of the nine who had ascites, seven were benefited by the roentgen ray. Seven of those with ascites died later. Pain was a prominent symptom in eight cases and was relieved in five. Seven of the eight patients with pain died later. Palpable abdominal or pelvic masses were noted in twelve patients, seven of whom died later. In four the masses disappeared; in three they became smaller; and in five they were not changed.

These results demonstrate that little can be expected when the primary growth has not been removed, but in cases of recurrence following removal of the primary growth, irradiation offers a fair prospect for at least temporary relief of symptoms, particularly of pain and ascites. The technique is described.

PHILIP H. ARNOT, M.D.

Novak, E. Ovarian Metastasis with Cancer of the Uterine Body. Is Transubal Implantation an Important Factor? *I. J. Obst. & Gynec.* 1927 XLV 470.

The material on which this article is based and a review of the literature indicate that the lymphatics constitute by far the most frequent route for the extension of cancer of the body of the uterus to the ovary. This is what would be expected from the knowledge of cancer characteristics in general. Some of the evidence for the spread of corporeal cancer by the lymphatics is summarized by Novak as follows:

1. The lymphatics have been shown to be chiefly responsible for the spread of carcinoma elsewhere.

2. Knowledge of the lymphatic drainage of the uterus explains quite satisfactorily the distribution of the metastases in the ovary as well as elsewhere.

3. Emboli of cancer cells are often found in the lymphatics.

4. Cancer metastasis is often found in the tube with or without ovarian metastasis. It not infrequently occurs in the wall of the tube perhaps without mucous membrane involvement as would be expected if implantation were important.

5. The surface of the ovary is characteristically smooth and uninvolved as would be expected in lymphatic metastasis but not in direct implantation of cancer particles on the surface.

6. The bilateral distribution so common in ovarian carcinoma suggests a lymphatic source rather than implantation.

7. The lymphatic theory, rather than implantation, explains ovarian metastasis with pyloric cancer, although this problem has not yet been satisfactorily solved.

8. The finding of free cancer particles in the tube in cases of uterine cancer does not justify the conclusion that associated pelvic cancer is caused by implantation of such particles, even in the event of their being regurgitated through the tube. More often these particles are probably moving downward toward the uterus.

9. Sampson's cases of supposed implantation cancer of the ovary are far more logically explained as due to lymphatic dissemination.

10. In view of the demonstrated importance of the lymphatics in the spread of carcinoma, it is not justifiable to attribute the spread of carcinoma to direct implantation unless the lymphatic route has been excluded.

11. Of the seven cases of ovarian metastasis herein reported, six appear to be logically explained by the lymphatic theory, while in the remaining case direct extension may have been the chief factor.

1. A study of cases reported in the literature bears out the impression that the lymphatics are the important route for dissemination.

In the operative removal of the cancerous uterus the prime importance of the lymphatics in the dissemination of cancer cells must be taken into consideration.

The author does not agree with Sampson that preliminary curettage should be avoided except when there is no suspicion of cancer or the patient's condition contra-indicates radical procedures. He believes that if such a policy were generally adopted it would inevitably lead to many unnecessary hysterectomies and a certain number of unnecessary deaths.

F. L. CORNFELT, M.D.

EXTERNAL GENITALIA

Peterson, R. Transplantation of the Ureters into the Bowel to Secure Sphincteric Urinary Control in Incurable Vesicovaginal Fistula. *Am. J. Obst. & Gynec.* 1927 VI 497.

The author is convinced that extraperitoneal implantation is preferable to intra-abdominal implantation of the ureter since, no matter how careful

the technique of the operation something s lable to go wro g because the procedu e is not l l e ordi nary intestinal surgery in hich an accurate tight approximation can be made

If the stab wound too cl ely appro imated to the urete hydro u eter an l hydro eph o i with ascending infect on vill r ult If the e i an escape of urine or fac s arou l the ope ing through the mucosa the pati nt w ll succumb unle s the pera tio hns been p rforme le trape it neally

E trape toneal implantat is no m re lifficult th n intra ab lom al impla tati n

The t nspla tation of b th u eter at th ame operation i ass ci ted th too g at r k nly one ureter houl l be transpl nte l at a time

The dang of r r nancy fter t nsplant ion of the uret r vill l pen l upon ho much if any renal infection i f nta re ult f the ope ation The me e po bility of h l i g r h e cr l not ju tify ste shi atio J J (i M D)

MISCELLANEOUS

Whit l ouse B Some Problems of t l e Men tru l F nct n th Ob er ations on the Rel ti n of the Gra fian Foll cle nd Co pus Luteum to Pat l of g cal Uter n Haem r hag El b gl W J) Ld b h Ob t s 39

The author h t l e the al sei n n mammal a l div le the ast u cycle into four parts foll

An strum or p iol of r t l o a t m per l f ndomet ial g th an l i nct o l a ti v 3 O t um pe l of de ire he fertil tation is effe tel

4 I reg anc r pseudopregna cy In man a d m k y there no an st um an l the c cle are c tructi e and cont u s Fe tile o ulati n mu t be considered s being a ph n m n n apa t f r m pro æstrum

I the hum female ulati n occur betw en the th tee th an l seventeenth day f the men tru l cycle The p æ t um nd æ trum o erlap s do o ulati n pseudopregnancy Fr m the lat of vulati n tate of pseud pr gn nc ex i s until ab ut the t enty eighth d y of the per l he nec o of the m tru l decidua take place a l e t r n l hum r rh g begi s

W th completio of the p dopregnancy a tate of pro t m de el p hich al eacle it cme ab ut the tv ntv ighth d y of the cycl but per i ts during the ab tio of the p eulopr gna cy Th i f llo ed t the conclun f th me strual haem rh g by a h r t ast al per d o pe d of le e to pon te f lizat n of th ovum ab ut t be liberat i from one of th matur g follicle

The funct f the co pus luteum i to m nta the nut it of the uteru and prepare the en lo metr um fo the embeddi g of the o um

Wh tehou ef ated Halb n exp riments of remo ing corp a fut a at pe i d vary g f om the

seventeenth to t enty fifth days In every instance uterine hæmorrhage resulted v ithin from thirty six to forty e ght hours He conclude that the true menstrual hæmorrhage is a result of degeneration and fatty necrosis of the corpus luteum the cause of hich is closely related to the death of the un fertilized ovum

In expe iment on graafian foll cle Whitehouse needed some of the foll cle and e cise l othe s Hæmo rhage esulted i all but one pat e t

He concludes that both the graafian follicle and the corpus luteum contain an acti e principle hich i es ential for the proper le elopme t and function of th endometrium If th pr ciple is ithd a n f m the c rculati n necro s f the superficial layer of the e d metr um en ue On the other h nd its con tant stimulu promotes developme t of the en l metrium until the matu e dec l a is formed Many stances f uter ne hæmorrhage in associa tion ith fibrocystic ova ie polyp ed ova e a d ch onic inflammato v di case of the uterine adnexa h thinks e due to the death of maturin graafian follicle and patholog cal corpora lutea

I A NOT M D

Parol G Tl Top graph y and Cl ical A pects of Tum rs of t e Femal Genitali (T p gr f l degl t m d g t l f m m i l) R l l d g 9 7 37

Parol ep rt th graph a d c e reports his meth l f r entgenography of the ureters in the f ntal a l i g t l l p nes t brng ut both normal n l p thologi al a symmetrie curvatu e par ticularly in the pelv c port n th se most fre quently affect d by ute ine and ova ian tumor

It s ob e vat on dicat that uteral di pl ce ment may be a d rect cause of diso de s n both the upp r and the lo er u ina tract and that myomata n l nb omata of the ute us and broad h ament pl y an mport nt ole n patholog cal de ations of the u eters e d bladd r

A cervical fibroma c u es rete tion of ur ne les through mechanical pressu e n th eck of the bladder than by pushing the t igone and urethr upw rd and fo ward thereby c u ing a reflex sp st contracture of the sphincter Inc ti e ce eult fr m a milar refl mechan m pr d i c n paralys of th ph nct

Re l le ion c comit t th g nital tumors (i hen ot ascr babl t a c l t l f tors preg nancy m lig ant legeneration f the ne pl sm intercur rent de ea et i) m v be c n sidered n the l ge major tv f ca es as lu t p imary r r v sta c used by ste o f the eter tr m the m chan cal action of the tum Fle pvelo phr t f p gna cy may be s mil rly expl ed nce i plac me t of th bl dle to a d the l f t f exampl the nsequet stretch g l c mpr io f the r ght u terwo ld ff rd b t cl et th u nar loo n the r ght s de The auth r ep rt c e n hich e e ephrit an l pvelo ephriti re cu ed by the oper ti e r m l of ge ital tum

With regard to the operative removal of genital tumors Iaroh advocates isolation of the ureter as a routine precautionary measure in all cases in which there is the slightest ground for suspecting its involvement in the field of operation. The operative ureterography diminishes the risk by demonstrating the relation of the ureter to the rest of the field.

Of special importance is a knowledge of the greater lateral and forward deviation of the normal left ureter in its pelvic segment as compared with the normal right ureter. In pathological conditions this deviation is often exaggerated. As operations for uterine fibromata and tumors of the adnexa require exposure of the left ureter four times as often as exposure of the right ureter the advantages of an accurate knowledge of ureteral topography in gynecological surgery can scarcely be overestimated.

MIRYA A. CHIDSELY

Hammant A. and Cornil L. The Lymphatic Origin of Certain Cystic Formations in the Pelvis Following Total Castration of the Female (Sur l'origine lymphatique de certaines tumeurs kystiques féminines consécutives à la castration totale). *Ann. Ch. Gyn.* 1907, 488.

Cystic or pseudocystic formations in the pelvis after total castration of the female are apparently not due to any single cause. The authors report a case in which several months after a total hysterectomy for salpingitis the patient returned complaining of severe pain on the right side and examination revealed a cystic mass in the right flank. The mass was removed. Some time later the patient again experienced pain in the pelvis and another fluctuant mass was discovered. Vaginal extirpation was attempted but because of the adherence of the mass and the occurrence of profuse bleeding removal was not feasible. A portion of the presenting wall was resected and the edges of the defect were

sutured accurately to the vaginal wall. Recovery was uneventful.

Histological examination of the specimen revealed immediately beneath the vaginal epithelium a layer of fibrous tissue with a rich network of blood and lymph vessels. The endothelial lining of the sac was continuous with that of dilated lymphatic vessels. The cyst was therefore a cystic lymphangioma. Whether it was a true lymphangioma or a simple hyperplasia resulting from an inflammatory process could not be stated with certainty but the authors believe it was the latter.

LEO M. ZIMMERMAN, M.D.

Guillemin A. Serous Accumulations in the Pelvis Following Operation (Collection serreuse pelvienne opératoire). *Bull. Soc. Obst. et Gyn.* 1907, 487.

The author reports a case in which the patient returned to him one month after an uneventful hysterectomy complaining of severe pain in the abdomen sides and back. In the right side of the pelvis a fixed tender fluctuant mass the size of an orange was discovered. On re-examination from week to week the mass was found to be slowly growing smaller. After the complete absorption of the mass the pain ceased entirely.

In the case of another patient pain developed in the back and pelvis following a somewhat stormy convalescence from hysterectomy for pyosalpinx and a similar fluctuant mass was found in the left cul-de-sac. The symptoms persisted without abatement for several months. Ultimately a colpotomy was done. About half a glassful of clear yellowish slightly stringy fluid was evacuated and the cavity drained. The symptoms then gradually ceased.

The origin of the serous accumulations is unknown but serous peritonitis lymph accumulations and late hemioma formation have been suggested as possibilities.

LEO M. ZIMMERMAN, M.D.

OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

II Item n C R peat d Pre n n y Aft Am n
o r l e Indu ed by Ro n tgen I r d at on of
t O es (W J) H S) b h ft)
Am h l l t h b t h l n d O
) / t H f t k l g

The case reported is that of a woman thirty two years old with a ricketty contracted pelvis. In 1921 because of severe menorrhagia and recurrent pulmonary tuberculosis she was given a full castration dose of the oestrogen rays on the right side and as this failed to produce the desired result she received half of the full dose on the left side four weeks later. The second irradiation was followed immediately by amenorrhoea.

Three years later without a return of menstruation the patient was delivered by forceps of a still born but full term and normally formed child and scarcely eleven months after this delivery she gave birth to a healthy girl weighing 2970 gm. In the second pregnancy premature labour was done. In the two years during which he was under observation the os mallovelloped child showed no evidence of roentgen injury. The mother's amenorrhoea still persists. HEAVY (G)

Tau g F J Tle Amn of c Flu d r d Its Qu n
t t t l V a i b l t y i J O l t G v)

Recent studies especially by chemical analyses of membranes and amniotic fluid pointed out to a remarkable function of the amnio. While the source of the amniotic fluid believed with reasonable certainty to be the amnion epithelium the cause of the quantitative variations in hydramnion and oligohydramnion are still unknown.

Certain types of deformity of the fetus are associated with hydramnion and other types with absence of the fluid. In both conditions malformations are very common.

In oligohydramnion necrosis of the amnion rather than the placenta may be the etiological factor.

In hydramnion the histological changes in the amnion or chemical changes in the amniotic fluid have been found to explain the occurrence of the condition but the placenta usually large and the increased surface secretion may explain the increase in the quantity of the fluid. There is definite evidence of the physiological swallowing of amniotic fluid by the fetus and when the absorption of amniotic fluid is blocked by a hindrance to deglutition or a stricture in the upper part of the digestive tube hydramnion results with striking frequency. Especially in the acute forms of hydramnion at term pregnancy (usually uniovulation) is often found

The prognosis for the child is poor in both groups of cases. For the mother the conditions under discussion usually mean a complicated but ordinarily not a dangerous labor. There is some tendency to early recurrence.

The fact that oligohydramnion occurs most frequently in primiparae and polyhydramnion occurs most frequently in multiparae indicates that the physical resistance to expansion of the uterus by the abdominal muscles is an important factor governing fluid accumulation. E L COVEL MD

GI Item n A Extr Ute ine P egnancy Rupt ed
by Suc cess F s u e s w t h Correspo d g
Haematocele (G s e e t a t n n m p e p r
t at s e h m t c e l o e p o
d t) B H S d b i t d g e d P 927
x 486

The case reported is that of a para forty two years of age who had two attacks of abdominal pain. The nausea and a tendency toward syncope. On examination a tender mass in the region of the right iliac fossa and softening of the cervix were made out. Following the patient admission to the hospital a third abdominal crisis occurred with a lemonstrable increase in the size of the pelvic mass. Laparotomy revealed a haematocoele occupying the right side of the pelvis and part of the right iliac fossa; a second and encysted haematocoele capping the corpus of the uterus and extending behind it and a third and smaller haematocoele also encysted lying in front and to the left of the uterus. The third haematocoele found proved to be the oldest and the next to the most recent of the three accumulations. The right tube which contained a fetus of about three months was removed.

This case clearly demonstrated the production of the distinct haematocoeles following three partial ruptures of an extrauterine pregnancy. It is unique in that the three accumulations were separate and distinct instead of being fused as is usually the case. To explain the different position of the haematocoeles the author assumes that the tube lay in front of the uterus originally and was gradually drawn backward by the increase in its weight from the successive haemorrhage. I TO M Z M IERMAN MD

LABOR AND ITS COMPLICATIONS

D L J B T Ne Id s on tle Mechan sm of
C l m l L c r a t i n Du l n g L b o A Pr
C l m l n a r y Repo t f J Ob i t G y 927
499

When the fetal head distended the cervix the latter may be stretched so much that it gives way at the sides that in its congenitally weaker portion

tions This form of laceration is the easiest to recognize the easiest to sew up and the one generally mentioned in the textbooks

In another form of laceration the mechanism of the tear is almost the same but while the musculature and fibrous tissues give way at the sides of the cervix which are the congenitally weakest spots the external and internal mucosa of the cervix does not give way and there is a submucosal parting of the tissues Inspection of such a cervix will show thick anterior and posterior lips with a very greatly stretched and excessively thin bridge of tissue on each side By grasping the internal and external cervical mucosa with two tissue forceps it is usually possible to separate these two layers from 1 to 1½ in without any difficulty and to discover in doing so that the very edges apparently intact have been disunited Occasionally however the edges are not torn at all that is the laceration is perfectly submucous The repair of such an injury is best made by splitting the mucosa and then digging out the deeper muscle and fibrous tissue and lifting it up so as to pass the needle beneath it

A third form of laceration of the cervix is much more complicated and not so easy to repair The cervix is dilated radially to the utmost and the damage to the tissues is general that is all the fibers are stretched beyond their limit of endurance The internal mucosa of the cervix becomes oedematous and is ripped from its base prolapsing through the external os The cervix after delivery looks like the everted anus of the horse

The repair of a cervix so lacerated is not easy The edge of the cervix is pulled down with ring forceps while the mucosa is pushed up into the uterus with the four fingers of the left hand the thumb making counterpressure on the exterior The vagina and bladder are held up by means of a suitable retractor and are not endangered While the cervix is thus restored to its normal condition at the stage of full dilatation three sutures are placed at about the juncture of the vagina with the cervix being introduced from the vaginal side These sutures go down into but not through the internal mucosa and hold the prolapsed layer in place until healing is well under way The procedure is seldom necessary on the posterior lip E. L. CORNELL M.D.

Hendry J Spontaneous Rupture of the Uterus Before or During Labor *Edinburgh M J* 19 7
xxiv Edinburgh Obst Soc 163

Spontaneous rupture of the uterus may occur unexpectedly and without warning in the course of

pregnancy unexpectedly and without warning in the early stages of labor or at the end of a prolonged obstructed labor following a definite train of warning symptoms the recognition of which might have prevented it

The author reports four of his own cases in detail and reviews fifty four others reported in the literature In the author's four cases rupture occurred (1) in a para ii with a bicornate uterus whose first delivery was accomplished by version (2) in a para ii whose first delivery was accomplished by cesarean section (3) in a para vi after a comparatively short labor with brow presenting and (4) in a para vi after a long tedious labor with occiput posterior position

In twenty one of forty cases studied cesarean section was found to be the cause of the rupture In sixteen of these twenty one cases the rupture occurred during pregnancy and in seven it occurred during labor

In 25 per cent of the cases studied the cause was damage to the uterine wall in previous intra uterine manipulations such as version manual removal of the placenta difficult forceps delivery or curettage or of disease of the uterine wall following septic abortion a septic puerperium or other inflammatory condition One rupture occurred at the site of an old perforation caused by a curette

Pituitary extract was regarded as the causal factor in 10 per cent while malposition and disproportion between the size of the presenting part and the pelvis was responsible in 12½ per cent The author calls attention to the fact that in all of the cases studied not a single rupture occurred following my omectomy

The principal signs and symptoms were shock pain hemorrhage cessation of the fetal heart tones and distinctness of the fetal parts to palpation

The author treated all of his own cases by supra vaginal hysterectomy In one case extraction of the fetus through the vagina was done before the operation
GILLIARD E MILLER M.D.

Jellett H The Abuse of Cæsarean Section *Brit M J* 1927 ii 451

Jellett states that cesarean section is seldom necessary and should be avoided whenever possible on account of its immediate risk and its possibly crippling effect upon the patient

He cites various statistical reports on the employment of the operation in contraction of mild degree eclampsia and placenta prævia

WALTER E LEVY M.D.

GENITO-URINARY SURGERY

ADRENAL KIDNEY AND URETER

Begg R C Incontinence of Urine of Renal Origin
B M J 5 g 927 9

Begg reports a case of urinary incontinence due to irregular development of the renal bud derived from the lower part of the wolffian duct

Incontinence due to an aberrant ureter occurs exclusively in females Corresponding anomalies occurring in males—in which the ureter opens into the prostatic urethra the vas deferens or the seminal vesicle—are not accompanied by incontinence as the latter is prevented by the powerful external sphincter The irritation may cause pollakiuria but never incontinence

While the anomaly is developmental its sequelae are not observed from birth in all cases When the ureter opens close to the internal sphincter the toxicity of the latter sometimes serves to retain the urine—at the expense of renal dilatation—until the muscle is relaxed in normal micturition

In the diagnosis the surgeon must determine whether the aberrant ureter is on the right or left side whether it is supernumerary or single and whether it is infected or dilated The functional value of the renal element involved must also be estimated

If there is a history of incontinence with normal micturition and urine is seen to drip away from the vestibule or urethra after the bladder has been emptied with a catheter the diagnosis of aberrant ureter is almost certain The rhythm of the drip is similar to that from a ureter draining through a ureteral catheter When the bladder is filled with a colored solution—indigocarmine or methylene blue—the urine dripping away remains clear In some cases repeated examinations may be necessary before the leak is discovered

An abnormal orifice is difficult to find even when it is known to be present When it is in the vestibule a careful examination with the help of a magnifying lens may be necessary If it is in the urethra a water-dilating urethroscope may disclose it if the patient is an adult In young children its discovery by the latter method will usually be impossible on account of the smallness of the urethra and the difficulty in getting sufficient dilatation

There should be no difficulty in differentiating the ordinary type of enuresis in which there is copious bed wetting which empties the bladder In cases of aberrant ureter the function of micturition is normal though there may be frequency from concurrent infection A group of cases more difficult to differentiate are those of diurnal incontinence in children in which as the result of weakness of the bladder musculature due to infection or other cause a small

quantity of urine escapes on exertion As a rule this does not begin until after the age of 6 years The patient should be closely observed preferably in a hospital Methylene blue should be given by mouth to keep the urine colored and filter paper covered with a gauze swab placed on the vulva so that the smallest leakage may be observed If after a week of observation with the patient in the recumbent position there is no staining aberrant ureter can probably be excluded

In the cases of adults where incontinence occurs only on coughing or exertion the diagnosis may be very difficult as the same symptoms are frequently associated with weakening of the vesical sphincter In these cases and those of vesicovaginal fistula the history should lead to a thorough urological examination Even in the youngest child the urethra can be satisfactorily examined with the urethroscope The cystic ureter may be palpated through the anterior wall of the vagina and urine expressed from it

The main points brought out in the article may be summarized as follows

1 There is a rare type of urinary incontinence caused by an aberrant ureter opening into the urethra or the vestibule of the vagina

2 The cardinal sign is incontinence in association with normal urinary function

3 The abnormality can be explained only by the assumption that the wolffian ducts enter into the formation of the female urethra and vestibule

4 Usually the abnormal ureter is one component of a double ureter so that cystoscopy shows two normal ureters in the bladder

5 The ureter is generally dilated and infected and belongs to a kidney which is diseased and has little function

6 The usual treatment should be nephrectomy or partial nephrectomy but in clean cases ligature of the ureter may suffice If the kidney is performing a large share of the renal function the aberrant ureter should be implanted into the bladder by a high operation

CLARENCE P O'CONNOR M.D.

Thomson Walker Sir J Tuberculosis of the
 Kidney *B M J 5 g 97 65*
 Fullerton A Statistics of Postoperative Survival
 in Renal Tuberculosis *B M J 1927 ii 63*

THOMSON WALKER states that as the result of improvement in urological technique and an increase in our knowledge of urological pathology the operative mortality in tuberculous disease of the kidney has been reduced from 25.4 to 2 or 3 per cent in the last twenty-five years

Renal tuberculosis occurs most frequently between the ages of twenty and forty years In chil-

dren it is rare and in the early stages is more frequently bilateral. The ratio of males to females affected is about 1. In adults chronic renal tuberculosis is unilateral in from 80 to 90 per cent of cases in the early stage.

Strictly speaking primary tuberculosis of the kidney does not occur. A primary focus is always present elsewhere in the body although it may not be demonstrable clinically. A history of pleurisy and clinical evidence of obsolete pulmonary tuberculosis are common while tuberculous glands of the mediastinum are found at autopsy in a large proportion of the case. Active pulmonary tuberculosis is associated with renal tuberculosis in 53 per cent of cases.

The exact relationship of tuberculous lesions in other parts of the body (also secondary) to the renal lesion is not always clear but some of these other lesions may be the immediate source of the tubercle bacilli infecting the kidney. Those most common are genital tuberculosis in the male and tuberculosis of the bones and joints. In the cases operated upon by the author tuberculous epididymitis was found in 33 per cent tuberculous prostatitis in 15.3 per cent and tuberculous vesiculitis in 7.3 per cent.

Experimental investigations have revealed evidence of infection ascending through the lumen of the ureter and histological examinations have shown evidence of lymphatic spread of infection along the ureter. Pathologically there is evidence of lymphatic infection from the thorax. However the weight of evidence at the present time indicates that the infection in renal tuberculosis is blood borne.

There are three varieties of renal tuberculosis: (1) miliary tuberculosis, (2) chronic renal tuberculosis and (3) tuberculous nephritis.

Miliary tuberculosis is an acute bilateral condition of no surgical interest.

Chronic renal tuberculosis includes apical tuberculosis, ulcerocavernous tuberculosis, tuberculous hydronephrosis, caseous tuberculosis, nodular tuberculosis and tuberculous abscess. In the great majority of cases the first change is a small loss of substance at the apex of a pyramid surrounded by a zone of inflammation. The ulceration subsequently spreads toward the base of the pyramid and a cavity communicating with the calyx is formed. Beyond this is a zone of inflammation which may show gray tubercles. There may be also a complete zone of gray gelatinous tubercles. Outward from the zone of inflammation isolated tubercles are dotted in normal renal tissue or arranged in streaks radiating to the surface of the kidney. The surface of the kidney shows groups of tubercles over the subjacent tuberculous pyramids. In the wall at the neck of the calyx or the division of the pelvis at its outlet or in the pelvic wall fibrous thickening may develop and cause occlusion of the passage. Persistence of urinary secretion in such an area produces a localized cyst or hydronephrosis but if urinary secretion is stopped caseous masses are formed. In many cases the ureter is greatly thick-

ened and rigid and shows ulceration, necrosis and caseation of the mucosa. Tuberculous infiltration, stricture and dilatation of the ureter may result.

In pulmonary tuberculosis the urine may contain albumin and casts. In chronic renal tuberculosis these may be present also in the urine of the other kidney. In the latter condition the symptoms usually clear up after removal of the tuberculous kidney. In some instances these findings have been attributed to toxic nephritis and autopsy has revealed either an interstitial or parenchymatous nephritis but no tuberculous changes. Tubercle bacilli have been found also in kidneys without any specific tuberculous changes.

The symptoms of renal tuberculosis do not at first and may never directly refer to the kidney. They may include (1) bladder symptoms such as irritability with increased frequency, (2) urinary changes such as polyuria, albuminuria and pyuria, the urine being faintly acid or neutral, (3) the presence of tubercle bacilli in the urine, (4) slight or occasional hematuria, (5) a continuous slight loss of weight, (6) renal pain or colic, (7) slight fever and (8) a palpable swelling of the kidney and thickening of the ureter. In uncomplicated cases tubercle bacilli but no other bacteria are found in the urine. Renal pain may be slight or absent. Colic may occur when there is severe hemorrhage. Fever is rare but occasionally the temperature rises to 99 or 100 degrees F. A high temperature is indicative of a mixed infection or general tuberculosis.

A tuberculous lesion of the kidney may be arrested as the result of (1) disappearance of the tubercle bacillus and replacement of the ulcer by scar tissue (rare) or (2) exclusion of the tuberculous focus by a ring of fibrous tissue (closed renal tuberculosis). In the latter case there may be bladder irritability for a time but as this subsides and no other symptoms develop the lesion may not be discovered until after death. The condition is usually discovered during routine examinations by roentgenography and cystoscopy. In the presence of the symptoms mentioned, cystoscopy and chromocystoscopy may show a closed and dragged out ureter. Both open and closed tuberculosis may be present in the same kidney. This explains a temporary cessation of symptoms. Urinary tract infection may occur from a tuberculous focus which has been closed.

The diagnosis of renal tuberculosis is based upon: 1. The spontaneous development of cystitis with an insidious onset in a young adult in association with discomfort, pain, enlargement and tenderness of the kidney.

2. Aseptic pyuria and albuminuria (constant signs).

3. The presence of tubercle bacilli in the urine. This is final proof of urinary tuberculosis but in some cases the bacillus is not demonstrable when the symptoms point to tuberculosis and in others it is demonstrable when other proofs of tuberculosis are wanting. When the bacillus is not demonstrable

in the urine the diagnosis may be made on the basis of the symptoms the presence of tuberculous lesions elsewhere in the body especially in the male genital system thickening of the ureter X-ray shadows of caseous masses in the kidney a positive cystoscopic finding Tuberculous bacilli may occur in the absence of other signs but in itself cannot be regarded as proof of tuberculous disease of the kidney In some instances it may be associated with a non-specific nephritis When pyuria is absent a closed renal tuberculous cyst can be excluded the case is no surgical tuberculous of the kidney

4 The complement fixation reaction In most cases accurate histologic method render the superior flu but some cases it is of value

5 Iodine cystoscopic finding These alone may warrant the diagnosis of renal tuberculous but the ureteral orifice may be normal when the kidney is intact or may be in a lesion in an area of tuberculous cystitis when the kidney is free from disease Chromocystoscopy is of little diagnostic value

6 The finding of catheterization of both ureters and examination of the urine with regard to tubercle bacilli other bacteria and the functional power of the kidneys In cases of advanced tuberculous cystitis in which the ureteral orifice were inflamed and ulcerated in the passage of a catheter impossible the author prefers to do a laparotomy and incise the ureter in the lower iliac region for the passage of the catheter but if the ureters are found diseased it is not opened

7 The demonstration by X-ray examination of calcifications in the tuberculous kidneys and thickening of the ureter and the demonstration by pyelography of changes in the renal pelvis and calices

The modern treatment of renal tuberculous is nephrectomy when the other kidney is healthy and there is no doubt contra-indications Partial nephrectomy has been abandoned because of the difficulty of determining the extent of the renal disease Nephrotomy is done only when nephrectomy is impossible Obsolete tubercles elsewhere in the body do not contraindicate nephrectomy When acute tuberculous of bones or joints is present operation on the kidney should be postponed until the extrarenal tuberculous has been successfully treated Active pulmonary tuberculosis a contra-indication to operation on the kidneys Tuberculous of the male genital organs does not prevent nephrectomy In bilateral renal tuberculous some surgeons remove the kidney showing the more advanced disease but this is justified only when one kidney proved to cause profound toxæmia and the other is in the earliest stage of tuberculous infection

In Thomson Walker's technique for nephrectomy the ureter is removed through the lumbar wound as far as the pelvic brim cauterized with the cautery or pure phenol ligated and dropped into the retroperitoneal space If after six months the disease

is still active in the ureter and is infecting the bladder extraperitoneal ureterectomy is done through a median suprapubic incision Ureterectomy is advisable when there is stricture at the lower end of the ureter with dilatation of the duct (8 per cent of cases) In most cases the wound is closed without drainage but in some instances drainage may be necessary on account of oozing or infection of the perinephritic tissues by tubercle bacilli or other bacteria Sinuses that appear a few weeks after primary healing of the wound are due to tuberculous infections and are treated by curettage the application of iodine and the administration of tuberculin

Tuberculous cystitis and ulceration usually subsides after nephrectomy but in chronic cases the full capacity of the bladder is lost and frequency develops The cystitis and ulceration may persist for years The treatment of the bladder consists in the administration of sandalwood oil and tuberculin High frequency cauterization has been recommended for superficial and limited ulceration

In the author's cases no results have been obtained from tuberculin alone but in all cases of renal tuberculous is Thomson Walker gives tuberculin (T.R.) for two years after nephrectomy This has a beneficial effect on the bladder and tuberculous lesions elsewhere in the body

FULLERTON reviews a series of 141 cases of renal tuberculous in 73 of which nephrectomy was done Five (6.8 per cent) of the patients died as the result of the operation All of the deaths occurred in the first 35 cases Of the 68 survivors 55 were traced Fifteen have died since a short period of complete relief Eleven died probably from a continuation of the tuberculous infection Thirty one of the survivors have been well for periods varying from twenty years to six months since the operation Including 4 patients who died from other causes eight years or more after the operation a total of 35 out of the 55 (more than 63 per cent) were apparently cured of their urinary symptoms The sequelae in the 9 survivors who were not cured include frequency pulmonary involvement epididymal in olment spinal caries and prostatic involvement All of these survivors however report more or less general well being

Of sixty-eight patients treated medically especially with tuberculin forty one were traced In these cases the condition was of the usual type and except in five or six operation was not contraindicated when the patient was first seen Twenty-six (63 per cent) of the patients are dead The survivors lived in more or less comfort for periods ranging from one year to eighteen years after the onset of symptoms but only two were really well In three cases there were deposits in the prostate vesicles or epididym and a bacillus was present when the patient was first seen One patient who had bilateral involvement in the early stages is well seven and a half years after the onset of symptoms but has an occasional attack of frequency The

other survivors showed symptoms up to five years from the onset of the illness.

These findings indicate that operation is the best treatment of renal tuberculosis. If operation is performed early before deep ulceration appears in the bladder relief is almost immediate. Even in late cases a cure may be obtained if the other kidney is sound. Deep ulceration and the presence of tubercle in the bladder render the prognosis less favorable, especially as regards the relief of frequency of micturition. Frequency ensues even when healing occurs because the scarred and contracted bladder cannot expand.

LOUIS NEUWELT M D

Thompson T Carbuncle of the Kidney *Lancet* 1927 cccviii 693

Carbuncle of the kidney is defined as a hematogenous infection of the interstitial tissue of the kidney producing a localized and circumscribed zone of multiple suppurating foci the remaining renal substance being unaffected. There is always a primary focus as a rule a furuncle of the skin.

The author reports the case of a woman fifty two years of age who developed a carbuncle of the neck during January 1926. Incision was done for evacuation of the pus. While convalescing the patient took a sea voyage. During this trip at the end of the first week in February 1926 she knocked her left loin rather severely against a bunk. Ten days later she was taken ill with severe pain in the left side a high temperature and general malaise. There were no urinary symptoms. A diagnosis of influenza and pleurisy was made and the patient brought back to England. After her arrival she continued to run an irregular temperature and complained of intense pain in the left side of the abdomen and loin. Her general condition became worse there were occasional rigors and the swelling rapidly increased in size.

On March 8 1926 the left kidney was explored by Kidd. This operation revealed a perinephric abscess and bulging of the lower pole of the kidney by an ill defined indurated swelling. The abscess was opened and drained the kidney removed and the wound drained. The pus from the abscess was found to contain staphylococcus aureus in pure culture. The patient made a slow but uneventful recovery.

The certain diagnosis of renal carbuncle can be made only at operation but the occurrence of a pyrexial illness accompanied by chills pain and swelling in the loins within a few weeks after a primary staphylococcal infection of the skin particularly when there is a history of a blow to the kidney region during the intervening time should always suggest this condition.

In the first few days of the illness the unexplained pyrexia may suggest an influenzal attack. When pain is an early feature a cough develops and the movement over one pulmonary base is diminished it may suggest pleurisy or pneumonia but a careful

examination of the lungs will fail to reveal any other abnormal signs. It may simulate also a bacillus coli pyelitis but frequency of micturition and dysuria are not common the urine is nearly always sterile and free from pus and the usual alleviation of symptoms does not follow the administration of alkalies.

Within a few days of the onset a deep swelling appears which is generally recognized as a bacillus coli pyelitis. Psoas abscess and on the right side appendiceal abscess and acute cholecystitis must be excluded by careful consideration of the history and the findings of physical examination.

The presence of a primary suppurative lesion suggests the possibility of secondary metastatic abscesses in the kidney. In cases of secondary renal abscesses the urine always contains a considerable amount of albumin pus and organisms. In renal carbuncle the function of the kidney as estimated by the rate of excretion of dyes is not impaired whereas in cases of secondary metastatic abscesses of the kidneys it shows gross impairment.

When the perinephric abscess is drained at operation inspection of the kidney will generally reveal a swelling at one pole with the point at which it has ruptured visible on the surface. If following the drainage of what is believed to be a simple perinephric abscess the wound continues to discharge after the elapse of a reasonable period of time the possibility that a carbuncle in the kidney has been overlooked should be considered. In such cases an exploration will be necessary. Considerable help may be obtained by injecting the sinus with bismuth paste or lipiodol when the presence of an irregular cavity within the kidney substance may be demonstrated.

If a case is seen early medical treatment may be tried with colloidal manganese staphylococcal vaccines or sodium nucleinate. When a perinephric abscess is diagnosed surgical interference is always indicated. Drainage is never sufficient in most cases nephrectomy will be necessary. When the carbuncle is found to be single small and at one pole the ideal treatment consists in excising it. The rest of the kidney which is unaffected should be left since as Kretschmer has shown a second carbuncle may occur in the opposite kidney.

CLARENCE R O CROWLEY M D

Danhie P Massive Infarcts of the Kidneys (*Les grands infarctus rénaux*) *J. dirol. et chir.* 1927 xii 481

Although only about forty cases of massive renal infarction have been reported in the literature the condition is not very rare. Experimental work with regard to the effect on the kidney of ligation of the renal vein or renal artery has yielded somewhat contradictory results but it appears that ligation of the vein leads to necrosis of the kidney and death in only about 60 per cent of the experimental animals whereas arterial ligation is always followed by necrosis of the organ.

In man the most frequent causes of renal infarcts are embolism and thrombosis of endocardial or aortic origin. Less common causes are childbirth and abortion. Unusual causes are neoplasms, local injuries, the testis compression, torsion or ligation of the pedicle, diphtheria, scarlet fever, grippe and retrograde thrombosis. Virchow reported the occurrence in children of diarrhoeal disturbances leading to dehydration or pressure on the renal vein by the inferior vena cava.

The pathological changes are those of infarction elsewhere. Here and there islets of viable tissue are found. In some instances several infarcts are present. The other kidney may undergo septic changes often shows small infarcts and areas of necrosis and is liable to irreparable damage if the affected organ is not removed.

The clinical picture is characterized by pain oliguria albuminuria and haematuria. The pain occurs at the onset of the attack. It is general at first but quickly becomes localized in the lumbar region. It is of a severe stabbing character and resists morphine often persisting for several days. It rarely radiates to the right or pudendal region.

The albuminuria is constant and massive. If albumin is present in the urine before the attack it is increased after the attack. It is due to vascular congestion and the elimination of necrotic products.

Oliguria is present in practically all cases. There is usually a diminution to from 500 to 800 c cm. Sometimes only 100 to 200 c cm of urine is passed in the entire 24 hours. Anuria may occur especially if both kidneys are affected.

Haematuria occurs in from 30 to 40 per cent of the cases. It is rarely of a gross nature and at times can be detected only with the microscope. It lasts for two or three days. Occasionally there is cylindruria (hyaline) haemoglobinuria or pyuria. Urethral catheterization in the affected side reveals a few drops of blood fluid containing albumen and casts. A renal tumor very tender to the touch is felt in the flank.

The general symptoms are not characteristic but as a rule the condition causes vomiting, collapse and a rise in the temperature to from 100 to 104 degrees F.

When operation is performed the attacks recur at interval of a few days or weeks until death results from uræmia or peritonitis.

The treatment indicated is nephrectomy to save the other kidney. Even when the symptoms are early in fact, infection may already have occurred in the other side or may occur later.

M. HAEL I MAS & M D

Bi J ri T The D agn and T eatment f
 M ligen nt Tumors of th Kidn y (N t s ll
 d ll l t m m l d l)
 l l l l l 9 434

In cases in which the presence of a tumor of the kidney is suggested by hystero-pneumography and retrograde catheterization of the ureter, roentgenography

and pyelography should be done at once. The first will show the origin of the hæmorrhage and indicate which is the diseased kidney and the second and third will show the deformity of the kidney and pelvis which is characteristic of renal tumor at a time when clinical examination is still negative.

Pyelography is of very great value. In doubtful cases it should be repeated in series at intervals of a few weeks or months and a comparative study should be made of the pyelograms obtained in this way to determine whether the deformity is progressive. Progressive deformity is a certain sign of tumor.

The only possible treatment of tumor of the kidney is nephrectomy. As a rule this should be done by the paraperitoneal route with free exposure of the hilus and observation of the general rules governing the removal of malignant tumors.

AUDREY G MORGAN M D

Motz G Pyelography and Pyeloscopy in the
 Diagnosis of Tumors of the Kidney and Renal
 Pelvis (L. pyel. g. ph. e. t. la. pyel. p. d. l.
 d. ga. t. d. t. me. d. e. t. d. bas. t.)
 4 1 1 d. la. l. d. de. k. r. o. z. 1

The author reviews twenty five cases of renal tumor in which a pyelographic examination was made and supplements his article with pyelograms.

Pelvic aphy may show changes in the outline of the calyces and renal pelvis due to protuberances or depressions total or partial disappearance of the outline of the pelvis total or partial disappearance of one or more calyces amputation of the calyces central or marginal gap a change in the orientation of the calyces and pelvis dilatation of the upper end of the ureter or distention or rigidity of the outline None of the deformities however pathognomonic of cancer as they may all be caused by clots calculi and infections Moreover a cancer may develop for a certain length of time without causing deformity of the pelvis or calyces

In ca es of cancer causing renal tumor and hema tu in the can r is sufficiently advanced for cl ncal diagn and pvelography s of only second r impo tance. When there is only a tumor pvelo graphy o better pvel copy ill sho that the tumor i a e l neopl sm and ill e clude other forms f enlarged kidney such as polycystic kidney.

Ham turn also e is the most frequent
 Pel gr phv h uid al ays bed ne nca es sho
 Only haematuria as it may make an early diag
 possible No ploratory ope ation sh ull be per
 formed without preliminary pelvogr ph If the
 pelvogr am shows the slightest deformity of the cal
 cules or e al pel i in such cases operat on should
 be considered

Of eighteen cases of renal cancer observed at the Neck Clinic sixteen showed left sided hydronephrosis and bilateral pelvic pyelonephritic infection. Of these cases in which hematuria is the only sign and the diagnosis is as doubtful left sided hydronephrosis is also the clinical suspicion of cancer was found in every case.

If pyelography is performed systematically in all cases of hematuria suggestive of cancer it will sometimes give a sufficiently early diagnosis of renal cancer to permit successful operation.

AUDREY G. MORGAN, M.D.

Mackenzie D. W. and Waugh T. R. Cystadenoma Pseudopapilliferum Malignum of the Kidney with Metastases in the Tongue *J Urol* 19 XXIII 331

The authors report a case of cystadenoma pseudopapilliferum malignum of the kidney with metastases in the tongue. It presented not only unique features but characteristics of importance with regard to the histogenesis and pathogenesis of the tumor. The patient was a man sixty-five years of age. In the right side of the tongue in immediate proximity to a dirty ragged tooth stump there was a hard indurated lump covered by a slightly ulcerated mucosa. On the same side there were several enlarged submaxillary glands. The abdomen was distended by a mass which filled the entire right side and extended slightly across the midline. Roentgenograms of the long bones and the chest showed no evidence of metastases. A cystoscopic examination was essentially negative except that roentgenograms of the ureteral catheters in place showed the right catheter pushed over to the left beyond the midline and the pyelogram of the right pelvis showed no shadow.

Operation was performed first on the tongue and submaxillary glands because they presented a clinical picture of primary carcinoma. After the urological examination the right kidney and the mass were exposed extraperitoneally through a curved loin incision which extended anteriorly almost to the median line.

The gross specimen of the tumor mass consisted of a rather small kidney, the lower pole having been replaced by a thick-walled ellipsoidal cyst the size of a pumpkin which was distinctly separated from the rest of the kidney by its thick capsule. The cyst contained 2750 c.c.m. of turbid chocolate-colored fluid. The outer surface of the cyst wall was smooth. The inner surface was covered by a soft spongy yellowish friable tissue.

Microscopic sections of the kidney at a distance from the cyst showed relatively well preserved parenchyma with an increase in the irregular hyaline fibrous connective tissue between the tubules in the medulla. A few tubules were obliterated. In parts of the hyaline tissue calcareous degeneration had occurred.

Sections taken from the various areas of the tumor tissue presented the metamorphosis of the neoplastic growth. Near the cyst wall at the pole of the kidney the section showed mature regular closely packed tubular renal which resembled the tubules of the medulla of the kidney. The cells rested on a rather rudimentary basement membrane. The growth here would be called adenoma.

Sections nearer the cyst began to show a less orderly arrangement. The tubules became larger irregular and cystic with invagination of the walls the picture of cystadenoma being produced.

Further away from the kidney under the cyst wall the cells took on a less mature appearance but a basement membrane was preserved. Pseudopapilliferous projections occurred into the lumen of the dilated acini which were found to be portions of aborted and incomplete tubular walls the inner portion of which had undergone atrophy and necrosis. The cells became more immature. Such a structure would be termed cystadenoma pseudopapilliferum.

Finally there occurred areas of atypical arrangement of embryonal cells breaking through the basement membrane. This structure represented the complete metamorphosis and was called cystadenoma pseudopapilliferum malignum.

Microscopic sections of the tongue and glandular structure showed a metastatic growth simulating in every respect the malignant portion of the kidney tumor.

In the authors' opinion the various steps showing the metamorphosis of this neoplasm support the theory that malignant growths of the kidney may arise from benign adenoma. Attention is drawn to the gross similarity of this neoplasm to the hypernephroma. The difference between true and pseudopapilliferous projections into the lumina of cystic growths was carefully worked out. The authors agree with Borst that the majority of papilliferous cystadenomata of the kidney are of the false type.

The literature shows considerable confusion in regard to nomenclature classification and derivation of these malignant atypical epithelial tumors of the kidney. The authors report their case not only because of its unique clinical and pathological features but also because they desire to simplify the classification of such neoplasms by emphasizing their possible modifications and transitions in growth.

The article is supplemented by a comprehensive bibliography and photomicrographs showing the transitional phases of the neoplasm.

J. EDWIN KIRKPATRICK, M.D.

Murogna P. Duodenal Fistula Following Nephrectomy (Sulle fistole duodenali consecutive a nefrectomia) *Ist. di chir.* 19 7 VI 657

The patient whose case is reported was a man forty-five years of age who had suffered for years from renal colic. When the author first saw him he had an enormous pyonephrosis and a temperature of from 40 to 41 degrees C. A roentgenogram showed calculi.

When the sac was incised a lumbar fistula secreting purulent urine remained. Three months later the kidney was removed. The operation was difficult because of adhesions. On the fourth day after the operation a perforation in the duodenum through

which bile was being discharged was found. The author concluded that the duodenum was injured in the difficult task of removing the kidney. The perforation was successfully closed by direct extra peritoneal suture.

In cases with this complication the soft parts should be protected with fat to prevent their digestion. Fecher introduces into the fistula a tampon of cotton impregnated with olive oil. As the oil does not mix with the intestinal fluid the tampon prevents the discharge of intestinal contents and permits cicatrization of the lesion caused by the discharge. Fecher reported the cure of thirteen fistulae in this way in from twelve to fifty days. In two cases the fistula was in the duodenum in five cases in the other part of the small intestine in five cases in the caecum and in one case in the colon.

In the author's case liquid and food by mouth are withheld in order to decrease the duodenal excretion of bile and pancreatic juice into the duodenum and the patient is fed by a tube with alkaline or neutral foods through a jejunal tube to get him in condition for operation. Direct extra peritoneal suture is then performed the duodenum being mobilized as much as possible. After the operation the patient is fed by nutritive enemata and glucose hypodermoclysis.

A DREY G M G N M D

Gaudian V. Surgical Treatment of the Ureter with an Extraperitoneal Opening (Hittelman).
 (Chicago Ill. 1917) 468

In a girl six years of age who was examined for enuresis existing since birth a suprapubic urinary ureter was found. This originated in the acetabulum of the left kidney and its termination was in a small para-urethral caruncle. Before the mode of operation was decided upon tests were made to determine the renal function on both sides. The presence of two normal ureters in the bladder was established by cystoscopy. In ligocamene and phenolphthalein tests indicated no malfunctioning activity of the right kidney and marked impairment of function of the left kidney (in one of a very low specific gravity and no elimination of the dye from either the normal or the supernumerary ureter).

Because of these findings the author resected the upper portion of the left kidney including the accessory pelvis together with the enormously dilated proximal segment of its ureter. The distal segment he left in situ.

Microscopic examination of the excised renal tissue showed atrophy of the glomeruli and extensive proliferation of the interstitial connective tissue.

Of the various plastic methods that have been tried transplantation of the ureter into the wall of the bladder seems to be the only promising one and this is useless except in cases in which the ureter drains a healthy kidney in all others (decidedly the

majority) total or partial resection of the kidney is the method of choice. MERRILL A. GILDE SLEEVES

Schreiber M. Ureteral Stenosis and Its Anatomical and Pathological Background. Based upon the Findings in 100 Consecutive Autopsies. J. Gynecol. & Obst. 9:7:43

By a study of autopsy material histological preparations clinical record and autopsy records the author attempted to answer the following questions: 1. Is there such a pathological lesion as that described by Hunner and his followers?

If so is its incidence as great as the reports indicate?

3. Does focal infection play a part in its etiology? 4. If not focal infection what is the true pathogenesis?

5. What are the finer and yet gross physiological anatomical structural forms that may give to pyelographic and x-ray bulb methods those clinical signs that are interpreted as ureteral structure?

The autopsy material consisted of 100 consecutive unselected autopsies 79 performed on adults and 21 performed on children. After careful examination of the organs *in situ* the entire pelvic contents with the ureters attached were dissected free en masse. Particular attention was paid to (1) the course of the ureter (2) the ligamentum latum with the crossing of the uterine artery over the ureter (3) the presence or absence of uterine prolapse or cystocele (4) the course and ureteral relations of the vas deferens (5) the seminal vesicles and prostate (6) the iliac and hypogastric vessels and gland (7) the bladder both its internal and external surface.

The ureters were then examined for both physiological and pathological zones of narrowing (1) widening and changes of density in their wall. In nearly every instance histological sections of the ureters were made.

Clinical records were examined for a history of urinary disturbance focal infection or ureteral stricture physical findings relative to the urinary tract and physical findings relative to focal infection.

Autopsy protocols were investigated as to the chief anatomical diagnosis the special anatomical diagnosis relative to ureteral structure and special anatomical findings of focal infection.

In 6 of the 100 cases some form of ureteral disease was found. Twenty-five of the subjects with ureteral disease were adult. In 5 of the 26 cases the condition was primary in the ureter. In 2 of the 5 examination revealed stenosis at the pyelo-ureteral anastomosis stenosis at the juxta-vesical region and in 3 congenital blind ureters with hydro-uretero-nephroses.

In 21 cases the pathological condition of the ureter was secondary to a neighboring pathological process. Of the 9 female inflammations of various pelvic organs as found 5 chronic cystitis 2 and prolapse of the uterus. Of the 10 males prostatic obstruction was found in 5 cases of neurological

origin in 1 cystitis in 1 tuberculous peritonitis in 1 and foci of lymphatic leukæmia in 2 Of the children a subureteral fibrosis at the site of the crossing over of the lateral umbilical ligament and obliteration of the hypogastric artery were found in one and microscopic deposits of lymphatic leukæmia in the other

The autopsy findings in each case are described in detail The following conclusions are drawn

1 Stricture of the ureter is a definite pathological entity

2 The discovery of ureteral stricture or stenosis in 1 per cent of the autopsies corroborates the great number of ureteral strictures or stenoses reported clinically

3 Latent symptomless hydro ureteronephrosis due to ureteral stricture or stenosis is of relatively frequent occurrence as was evident from the fact that it was found in 10 per cent of the autopsies

4 Ureteral stricture as a localized intrinsic inflammatory process in the ureteral wall metastatic in character and due to focal infection apparently does not occur or is extremely rare as compared with ureteral strictures or stenoses of other origin

5 Ureteral stricture or stenosis is found most frequently in the pelvic ureter in a zone from 2 to 6 cm up from the ureteral orifice

6 As prime etiological factors in the pathogenesis of ureteral obstruction due to stricture and stenosis we would emphasize in the order named (a) congenitally accentuated narrowing of a physiologically narrow site (b) extension of inflammatory processes into the ureteral wall from adnexal disease with or without thrombophlebitis and advanced chronic cystitis (c) the occluding kinking power of crossing anatomical structures such as the vas deferens in the male and the uterine artery in the female

7 Caution is necessary in the interpretation of the physical signs obtained by the wax bulb hang method of Hunner especially in the very important region from 2 to 6 cm up from the ureteral orifice since in this region are found numerous physiological sites of narrowing and increased density of the ureteral wall namely (a) the juxtavesical zone (b) the iliac zone (c) the ligamentum latum region the site of crossing of the uterine artery (d) the vas deferens region the site of the crossing of the vas deferens (e) the site of the obliterated hypogastric artery and (f) the so called valve formation in the juxtavesical region

CLAUDE D PICKRELL M D

Carson W J Metastatic Carcinoma in the Ureter 11 Surg 1917 LVIII 549

Carson reports the gross and microscopic findings made at autopsy in cases of primary carcinoma of the prostate extending to the ureters by way of the lymphatics In Case 2 there were metastases also in the renal pelvis

In the literature only a few cases of metastatic carcinoma of the ureter and kidney are to be found In 1925 the author first demonstrated and reported

cancer cells in the perivascular lymphatics of the ureter secondary to primary carcinoma of the prostate bladder and cervix uteri The rarity of metastases to the ureters from the prostate and other pelvic viscera is due in all probability to the drainage of the lymph downward in the lower portion of the ureter

Carson's article contains photomicrographs of tumor cells in the perivascular lymphatics of the ureter and kidney pelvis

J EDWIN KIRKPATRICK M D

BLADDER URETHRA AND PENIS

Graves R C Studies on the Ureter and Bladder with Especial Reference to Regurgitation of the Vesical Contents The Bladder Pressure Curve in the Human J Urol 1927 XXIII 321

The one fundamental requisite for regurgitation of the contents of the bladder is a sustained tonic contraction of the vesical musculature as it actively resists distention Atonic bladders never regurgitate therefore postmortem experiments are futile With regard to experiments on animals Graves states that there are no intrinsic anatomical differences such as have been claimed between the ureterovesical relationship of the laboratory animal and that of man

Bladder regurgitation is of clinical interest because of its very obvious relation to ascending kidney infections

Graves believes that in man regurgitation occurs in the presence of obstruction at the bladder outlet In his study of the phenomena he has employed a new instrument with which it is possible to record accurately the development of intravesical pressure during bladder filling This apparatus was devised by Rose of St Louis who has recently published a report of his studies on the pressure in various types of human bladders with particular reference to the diagnosis of disturbances of innervation

Graves describes the active animal bladder from which regurgitation readily takes place the passive animal bladder from which regurgitation is not to be expected and the characteristic human pressure curves which place the human bladder in the active group

LOUIS GROSS M D

Joelson J J and Lower W E Inflammatory Lesions of the Bladder Simulating Neoplasm A Report of Three Cases S g Gynec & Obst 1917 XLV 417

Inflammatory lesions of the bladder simulating neoplasm are not common

In the first of the authors three cases cystoscopic examination revealed a sessile reddish tumor about 1.5 cm in diameter which was raised about 1 cm above the mucosa and overlay and concealed the orifice of the left ureter On its surface there were numerous rounded villi The rest of the bladder was practically normal

then allowed to cicatrize for four or five weeks until circulation is established in the tube.

At the end of that time the tube is cut free at its lower end slit longitudinally turned inside out and sutured to form a tube lined inside with skin and with the bleeding surface outward. Two incisions are then made in the skin of the penis one at the hypospadias opening and the other at the sulcus of the glans and free dissection is done so as to leave a tunnel along the penis. The tube is caught and pulled through this tunnel and through another made in the glans and brought out at the meatus where its edges are sutured. The posterior opening is then closed.

This method can be used in all cases except those in which the hypospadias opening is very far forward.

AUDREY G. MORGAN, M.D.

GENITAL ORGANS

Lower W. E. Complete Closure of the Bladder Following Prostatectomy *J. U. M.* 133 1927 LXXVII 749

The author describes a method of suturing the bed of the prostate securely with complete closure of the bladder following prostatectomy. He has used this procedure in fifty cases. He believes it is contra indicated in the presence of severe cystitis.

In the closure of the prostatic bed, no packing of any kind is used. An in lying catheter with two openings is placed in the urethra. With a dot and

dash type of switch a suture of No. 0 or No. 1 catgut is passed below the catheter from the bottom of the prostatic bed along its wall up through and to include a small margin of the bladder mucosa. The needle is then removed and threaded on the other end of the suture and the same procedure carried out on the opposite side. As many such sutures are placed above the catheter as may be necessary to close the cavity. One fine suture is used to anchor the catheter in position. A soft rubber cigarette drain is placed in the space of Retzius for a few days.

With the aid of this technique Lower has found that the period of convalescence has been shortened postoperative care has been lessened and the danger of suprapubic fistula has been reduced. He emphasizes the necessity for avoiding stricture formation at the vesical neck in suturing the prostatic bed about the catheter and avoiding the use of heavy catgut which may act as a residual foreign body.

In the discussion of this paper CHUTE LEWIS and RANDALL emphasized the importance of adequate postoperative drainage.

CLAUDE D. HOLMES, M.D.

Campbell M. F. Gonococcus Epididymitis *Ann. Surg.* 1927 LXXVI 577

This article is based on a study of 3,000 cases of gonococcal epididymitis treated at Bellevue Hospital, New York during the last eight years. The important conditions from which this disease must be differentiated are genital tuberculosis, non-spe-



Technique for closure of capsule after prostatectomy (Lower—Complete Closure of the Bladder Following Prostatectomy)

cific epididymitis (bacillus coli and staphylococci) lues and torsion of the permatic cord

In the cases reviewed the morbidity was high but there were no deaths Benzla found sterility in 10.5 per cent of patients who had gonorrhœa with out epididymitis in 3.4 per cent of those with unilateral epididymitis and in 41.7 per cent of those with bilateral epididymitis

Various palliative measures are discussed Dathermy relieves the pain but does not shorten the course of the disease Vaccine sera intravenous medication foreign protein injection and various local medicaments are of little value The best palliative treatment rests in the use of a special zinc oxide suspension and the application of ice to the affected organ If the severe pruritus more than for twenty eight hours suggests it should be given Sterility is no greater after operation than without operation Early operation may decrease the secondarily complete sterility as suppuration and subsequent abscess formation Open pyelidymotomy by the method of Hagne is the procedure of choice In Bell's Hospital this operation is followed by the application of a special scrotal hæmostatic compression bandage Most of the patients are discharged in the first day

M R I MELZ M D

Morris J H Malignant Tumors of the Testicle
A Special Reference to Classification
J S G 9 53

Morris says that malignant tumors of the testicle constitute less than 3 per cent of all malignant tumors but that the unique features have to be used upon them as a guide for future study which in turn leads to their importance

In a case which he reports in detail the entolermal derivation predominated in the primary tumor in the form of embryonal adenocarcinoma but the potentialities of the other upper embryonic layers are evidenced by a variety of vascular metastases in which all three germ layers were represented One of the metastatic deposits disclosed a structure which has been identified by advocates of the sustentacular characteristics of the seminomatous tumor The latter because of its embryological and supposed homologous nature is said to be derived from the adult cell of the seminiferous tubules thus precluding any teratogenic relationship

The testis with its immature structure appeared as a deposit associated with a gonofibrous dermal vascular metastatic origin of which is unquestionable Therefore if it is true as stated by Schultz and Lindner that all of the metastases of any given tumor will be followed by the particular tissue composition of the primary tumor which has taken on malignant proportions it follows logically that at least in this case the seminomatous tissue as a constituent of the mixed heterologous tumor of an undoubted embryonal type

If the foregoing premises correct the conclusion is warranted that this is an isolated case of

neoplastic tissue has been demonstrated as an element of a heterologous embryonal structure of teratomatous nature

It seems justifiable to conclude also that the large celled tumor of the testicle is of embryonal type that the theory of its probable unicellular or homologous nature has been disproved and that the evidence adduced from the case reported substantiates Ewing's theory of the teratomatous origin of the tumor
Lotis Gross M D

MISCELLANEOUS

Cutler I H Obstruction of the Urinary Tract
I J Med & Sg 97 138

Cutler discusses various urological instruments and procedures and states that an accurate diagnosis can be made in about 9 per cent of urological cases by the intelligent use of the urological armamentarium He reports 11 cases in detail to illustrate the different types of urinary obstruction the method of procedure in each type and the results obtainable

Obstruction of the urinary tract appears to be a common factor in renal diseases The injury it causes is directly proportional to its degree and its distance from the renal cortex As cases of different etiology present similar symptoms a careful urological study is essential The most valuable aid in the diagnosis of obstruction of the upper urinary tract are the catheter and the pyelo ureterogram

Most obstructions of the upper urinary tract with the exception of those due to neoplasms may be cured or relieved by so called closed operative procedures through the cystoscope In hypertrophy of the prostate the establishment of drainage before enucleation is essential In obstructions at the neck of the bladder the most thorough drainage is obtained by suprapubic cystostomy

Thomson F FINE M D

Kreutzmann H A R Polymyelitis Involving the Urinary Tract
Chest Med 97 53

Kreutzmann has had under his care a case of polymyelitis which presented findings similar to those of spinal cord bladder but in which none of the spinal cord conditions usually associated with spinal cord bladder was discovered

In the literature the bladder involvement of polymyelitis is described as occurring in the acute stage Only one case is reported in which the urinary tract was involved in the later stages of the disease

Kreutzmann draws the following conclusions
1 In the early stage of polymyelitis acute retention is sometimes a complicating factor

2 In chronic polymyelitis there may be gross changes in the urinary tract which will give rise to the typical findings characteristic of spinal cord bladder
Lotis Gross M D

Eberbach C W and Arn R D Hexylresorcinol
in Urinary Tract Infections Therapeutic
Effect *J Am M Ass* 1927 **LXXIX** 512

During a period of two years the authors used hexylresorcinol in the treatment of about 200 cases of urinary tract infection. Eighty two cases were controlled with sufficient accuracy to present evidence for or against the value of the drug. The following conclusions are drawn:

1 Hexylresorcinol alone will cure about one third of patients with infections of the upper urinary tract in which foci of infection and urinary tract obstruction have been removed. In an additional 20 per cent it will give a symptomatic cure. In about 43 per cent it will improve the condition and in about 25 per cent it will have no effect.

2 In all but about one fourth of the cases of infection of the upper urinary tract an important and

valuable effect of the drug is its rapid and continued relief of symptoms.

3 The earlier in the course of the disease that treatment is begun the greater the chance for cure. In cured cases the average duration of symptoms is nine and one half months and in cases benefited twenty three months.

4 In mixed infections under treatment cocci often disappear from the urine while colon bacilli persist.

5 Coccus infections respond to treatment with hexylresorcinol far more certainly than bacillary or mixed infections.

6 If the use of hexylresorcinol is combined with other effective methods of treating infection of the upper urinary tract it is probable that the percentage of cures will be considerably increased.

THOMAS F. LEEGAN, M.D.

SURGERY OF THE BONES JOINTS, MUSCLES, TENDONS

CONDITIONS OF THE BONES JOINTS MUSCLES TENDONS ETC

Scl ruffler R McE Recu ent Vult ple Osteo
myel t s Due to Staphylococcus Aureus J
b + J I S g 9 7 74

Schaffler re iews a group of cases of recu rent
multiple o teomyel tis due to staphylococcu au eu
in which there a an acute o set in childhood
followed by numerou remiss ons and exacerbat ons

There is usually involvement of one or both
femora includ g the h p joint or tv o or more foci
in the humeri or tibiae Several severe lesion appear
in rapid succes s n and others occur within one or
t o year th lesions of the periosteum or deep
fasc a lainfal swelling may esolve o suppurate
The absce se heal promptly afte surgical or spon
taneous dra nage Lesions of the humeru ce tral
and lo ier t bia and ulna and radius recover by
spontaneous or surgical eque tration whereas many
lesion of the sh ft of the femur form extensive
sequest a h ch requi e operation

In the l ss severe types of cases there are o e or
mo e major bone les ons and a long se ies of pe ios
teal or deep fascia lesions

Of eighty five ca es of osteomyeliti studied si tv
p esente l single les n fi e howed syph l tic in
v olvement and twenty ha l multiple lesions se en
being of the se e e and tht t en of the l severe
type

Schaffler emphas zes the ece sitv of search
i g for and eradicating the quiet foci n the cancel
lous bone These are found m st often in the upper
tibiae and next most ofte in the femur Thei
presence may be determined by caref l X ray
examination of a focus in h ch the sinu re opens or
near v h ch sm ll new absce es fo m

The article includes a nu ber of case reports

KU OLPH S KEICH MD

Dega W and Zeyland J Tle P th genesis of
Oste tis F brosa (C t b t a l e t d d l
p th g d l e t fib) L J r 9 7
v 3 7

The case reported seems to add weight to the
theory of the non specific o i g n of Recklinghausen s
disea e Following a bil teral Schede Ludloff ope a
tion for hallux valgus on a foundry work thirty
three years of age an e amination of the exc sed
portion of the r ght metatarsal head showed the
following changes at their height in two well defined
foci communicating with the periosteum fibrous
degeneration of the bone marrow lacunar reso p
tion by osteoclasts haemorrh g foci and an in
tense vascular scl e o Vascular les ons on the
left metatarsal of a s milar nature but less marked

in licated an nital stage of which the more defi
nitely circumscribed lesio s on the right side were
a later development The cause appeared to be
purely local but the ca e is of interest in view of
ce tain known instances of generalized arterioscle
rosis accompanied by osteitis fibrosa (Stenholm)

MINA A GILDERSLEEVE

Berard and Tavernier The T e tment of Osteosa
com ta by Phy cal Agents (A p p d t te
m t d te ome p le ag ta phy q e)
L J 9 7 v 45

Comments on Tavernier s methods of d nos
ing and treating spindle cell sarcoma BERARD cite
the re ults obtained with roentgen and radum
therapy by Regaud and othe s Except in the case
of patient with spindle cell sarcoma of the orbit
ho has remained free from recurrence for two yea
following roentgen irradiation Berard has not yet
obta ned a final cure with radiotherapy

Of Regaud s e ght cases v ith involvement of
the orbit upper and lo ier javs ulna and humeru
seven have remained cured since 1919 Prolonged
roentgen treatments with moderate dosage are g n
except for the smaller tumors of the upper jaw The
latter are treated preferably by evacuation followed
by radum therapy

Berard grees th Regaud as to the importance
of biop y In cases of e tensive malignancy bi
opsy should be preceded by roentgen irradiation It
determines the d agnosis pro no is and method of
treatment

TAVERNIER att ibutes Regaud s advocacy of
biopsy to inadequate knowledge of the possib lity
of d agnosis by roentgenography By means of the
roentgenogram it is poss ble to distinguish benign
tumors from arcomata and osteit nd spindle cell
sarcomata from osteitis he eas biopsy is frequently
uncertain and al ys da gerous Moreover in
cases in which a prel m nary irradiation s given the
biop y must be d ne before the tssues undergo any
v isible change and this is impos sible if the ses ion
are dist ibuted o er a period of ten days or so as v
desi able

M A GILDERSLEEVE

Guc A A Ca e of Congenital Ulno Palma
Club hand with Sublu tion of the Finger
(U e u m n bote uht p l m e g e t l
e bl t d s ph l g) R d rth p
977 v 4 7

The si ve r ld chll hose c se is report d
p e ented co genital malfo matio s of the left
foot and both hand but v as other e normal The
hands we e held in exaggerated palmar flexi n
strongly adducted to and the ulna s de v th the
finge s hyperextended at the metacarpophalangeal

joints and flexed at the interphalangeal joints. The radial styloid was quite prominent, the proximal phalanx appeared somewhat shortened and the thumb was adducted and seemed smaller than normal. Except for some questionable atrophy the arm and forearm were normal. Flexion at the wrist to a right angle and extension to the horizontal were possible. Pronation was somewhat exaggerated but supination was almost absent. Active flexion of the fingers was impossible. Passive extension was possible to 90 degrees. Flexion was opposed by the dorsal ligaments and tendons. Movements of the thumb were about normal. The left foot presented an equinovarus deformity. There were no pathological neurological findings.

Manual reduction and massage were instituted and the hands put in celluloid splints at night. After a year the hands appeared almost normal showing only a slight tendency toward the former vicious deviation. Active movements however were not much improved.

Cases of this deformity not associated with osseous dystrophy are rare. As far as the author is aware the subluxation at the metacarpophalangeal joints has not been described previously.

The pathogenesis of the condition is not explained. Amniotic pressure (Dareste), amniotic bands (Kirmisson) and osseous and muscular dystrophy have been suggested as causes. In the case reported dystrophy or aplasia of the lumbinals and interossei with contraction of the flexor carpi ulnaris and weakness of the finger flexors would explain the deformity. The etiology is important from the standpoint of treatment. If no serious muscular disturbance is present treatment similar to that for club foot should be adequate but if the muscles are atrophied or dystrophic tenoplasty of various sorts are indicated.

MICHAEL L. MASON, M.D.

Donati M. Lower Dorsal Kyphosis in Adolescents (Su la cifosi dorsale infenore degli adolescenti) *Arch. ital. di chir.* 1927 LVIII 560

The author reports a number of cases of low dorsal kyphosis and supplements his report with roentgenograms and photographs. The condition may be due to different causes but occurs during the years of growth. There is an indisputable connection between growth and the kyphosis. Cases in which the condition occurred in infants have been reported but in the author's opinion these were probably cases of Pott's disease.

The localization of the disease in the lower dorsal column is due to a special predisposition of the bodies of the lower dorsal vertebrae which are the last to complete their normal development and in which there frequently persists a transverse median area less rich in bone lamellae than the other vertebrae and having a larger marrow space. This area is constant in infants and disappears gradually with the development of ossification. In addition to these changes in the central part of the body there are others of varying intensity in the epiphysis.

When these are particularly marked even if there is no spontaneous pain or pain on pressure which is not frequent the hypothesis of an epiphysitis or an osteochondritis deformans may be justified. In some cases trauma or acute infection may impress special anatomical characteristics on the kyphosis.

If an early diagnosis is made and proper treatment is applied the disease may be cured or at least improved and its progress stopped. Further studies are necessary to determine its etiology and pathogenesis. The theory ascribing the condition to osteochondritis may explain some of the severe cases and the theory ascribing it to epiphysitis may explain some of the milder ones but neither of these theories will explain all. There is no doubt however that there is a relation between growth and the kyphosis and that the localization in the lower dorsal column is due to the special morphological conditions and decreased resistance of the lower dorsal vertebrae. AUDREY G. MORGAN, M.D.

Wallace J. O. and Permar H. H. Internal Derangement of the Knee Joint. *J. bone & Joint Surg.* 1921 XV 677

A dislocated semilunar cartilage in the knee joint acts as a foreign body. If an acute dislocation is reduced and the joint is put at rest complete recovery usually results. Recurrent dislocations cause extensive joint changes such as longitudinal splitting or transverse fracture of the cartilage with displacement of the fragments. These result first in an aseptic inflammation with congestion and a serous and cellular exudate and later in hyperplasia of the synovial membrane or overgrowths of granulation like tissue followed by congestion, vascularization and fibrosis of the fat pads. The smooth articular surface is covered with a film of granulation tissue called pannus. The fat pads may be injured coincidentally with the cartilage and become swollen and congested the condition suggesting a dislocated semilunar cartilage. If a bit of fringe or villus becomes centrally degenerated it may calcify, become detached and form a foreign body which if covered with cartilage develops into a joint mouse.

Internal derangement of the knee joint may be caused by trauma ranging from a simple sprain of the internal lateral ligament to dislocation and fracture of a semilunar cartilage, rupture of the crucial and lateral ligaments and fracture of the spine of the tibia. There is usually a history of sudden severe strain with the knee in a flexed position, a slipping sensation within the joint, inability to extend the knee completely, and severe pain. In chronic cases there is intermittent slipping in the joint without locking, tenderness along the internal lateral ligament and over the anterior margin of the tibia medially, and recurrent effusions into the joint with subsequent stretching of the capsule and ligaments and atrophy of the muscles. The scar tissue at the side of the torn cartilage causes a curling of the cartilage. In another group of cases there are the usual points of tenderness and effusion. A char-

arterial sign: slight limitation of complete extension due to partial locking of the joint

Roentgenograms may demonstrate a narrowing of the joint space on the distal of the injured cartilage a thickening of the structures in the anterior pouch and lifting at the margin of the condyle due to a thickened pannus formation. The external semilunar cartilage is rarely injured. When it must be removed the removal of the internal cartilage is so ad is ble

The treatment consists in the removal of the irritating cause. In seventy-one arthrotomies performed in the usual manner with the knee flexed the internal semilunar cartilages were removed in thirty-three the external semilunar cartilages in eight fat pads in three and both cartilages in three. In three cases the semilunar cartilage was found to be tuberculous and in one case a tuberculous cyst was found springing from the anterior end of the semilunar cartilage. In one case the posterior horn of the internal semilunar cartilage was ruptured and adhered to the fragment above the internal condyle

RUDOLPH S REICH M D

Biss Ruptures of the Tendon of Achilles (A)
p p d upt d t nd d chlle B H I
e 50 t d h 9 7 1 98

Rupture of the tendon of Achilles while not common a case from rare. In two cases seen by the author the rupture occurred while the patient was pushing a barrel. In one case it occurred at the insertion and in the other in the upper third of the tendon. The latter was of special interest because it had remained untreated for three months with the following effect: marked inability to flex the foot marked reduction of the flexion and rapid fat gain which prevented the patient from working. At operation each fragment of the tendon was found to be in a point thinning end to end future difficult.

An excellent result was obtained by suturing the tendon and maintaining the foot in extreme flexion for several days.

When they are operated upon immediately these ruptures are cured very easily

A R F DE GROOT M D

SURGERY OF THE BONES JOINTS MUSCLES TENDONS ETC

Grantham S A A Method of Spinal Fusion in Tuberculous Spinal Disease in Children J Bo
E J I S g 9 48

Grantham describes a simplified method of splinting the spine with autogenous bone grafts for tuberculous spondylitis.

A transverse incision is made just beneath the spinous process of the second vertebra below the lesion though the supraspinous ligament to a point just above the level of the lamina. A tunnel is osteotomized in the middle with a rectangular groove in the middle and depth with a handle bent

like a crow is introduced into the incision at a point on the posterior process just above the lamina. The first process is then divided. The spinous process is then divided to a point two vertebrae beyond the other end of the incision and with the instrument is set in an autogenous tibial graft fitted into the groove of the instrument is inserted into the tunnel. The osteotome is then withdrawn with the graft in contact with the stump of the spinous processes and with the lamina below. The only sutures necessary are those for closing the wound.

After the operation the patient is permitted to be up and about as soon as he desires. Grantham prefers this method to the Hibbs and Albee procedures because the latter require division of the dorsal fascia which he considers of importance for support. Moreover this method gives immediate immobilization takes much less time than the other procedure and is attended with very little shock.

The article includes a report of six cases in which favorable results were secured.

RUDOLPH S REICH M D

O'Good R B Etiological Factors in Certain Cases of So Called Sciatic Scoliosis J B J I
S g 9 7 007

O'Good Goldthwaite and Buchholz believe that in some cases sciatic scoliosis is due to arthritis resulting from the absorption of toxins from the large intestine in intestinal stasis. In numerous instances a roentgenological study made following the administration of a barium enema revealed retention of the barium in the caecum or transverse or descending colon after twenty to thirty hours.

In O'Good's cases the patient is put upon a non-constipating diet and faulty bodily mechanics are corrected by exercises. Frequently an abdominal pad or a light brace is applied to maintain the correction of the position when the patient is ambulatory. Mineral oil and agar are given and if necessary are supplemented by senna licorice powder or castor oil or colonic irrigations. Occasionally colonic enemata are given first every day and later every other day or twice weekly. Brown's method of abdominal massage is used.

Scoliosis due to intestinal stasis are reported in all the regions suggested, elevated in marked improvement.

RUDOLPH S REICH M D

Lambert C A New Operation on Drop Foot
B I J S g 9 7 x 93

In the operation described by Lambert a new incision is made above the external malleolus close to the posterior margin of the fibula, carried down below the external malleolus and terminated at the center of the middle metatarsal bone. The skin and all of the soft parts down to the periotomy are then dissected back so as to expose the foot and back of the ankle. Care is taken to leave intact the anterior and posterior ligaments of the ankle joint itself. The peroneal tendons are then dissected up. The tragaloscaphoid joint

is opened and the knife carried under the head and neck of the astragalus into the front part of the subastragaloid joint. The interosseous ligament is then divided and the knife carried into the posterior compartment of that joint.

The subastragaloid joint is sufficiently freed to allow the foot to be dislocated inward, the astragalus being left *in situ*. In order to mobilize the foot a little more the soft parts are dissected away from the upper surface of the os calcis and the lower articular surface of the astragalus and a notch is made horizontally from side to side in the posterior aspect of the scaphoid. The head of the astragalus is then depressed to its utmost limit and the neck is sawed through. The foot is dorsiflexed so that the cut surface of the os calcis and the sharp anterior margin fit into the notch made in the scaphoid.

The obliquity of the saw cut through the neck of the astragalus depends upon the angle at which it is desired to set the foot. If the paralysis is complete the foot should be set at an angle of 90 degrees to the leg. If the paralysis is incomplete the foot should be set in varying degrees of equinus so that whatever power remains may be employed over a more useful range.

The angle produced between the articular surface of the os calcis and the astragalus both denuded of their cartilage is filled up by a graft taken from the excised head and neck of the astragalus. This graft is not intended to act either as an intra-articular or extra-articular block; it is designed merely to increase the anteroposterior thickness of the astragalus when it is placed in the practically vertical position.

This operation has been tried for almost all degrees of foot drop from complete paralysis of the dorsiflexors to partial paralysis associated with valgus and varus deformity. It has been done also on patients between the ages of six and sixteen years. In seven of nine cases it was completely satisfactory. The two failures were due to slipping of the astragalus. The best functional result is obtained in cases of partial paralysis because in these it is possible to place the foot at an angle which enables the patient to make better use of the power he has left. In one case Lambirudi transplanted the active peronei into the tibialis anticus and posticus and set the foot at an angle of 100 degrees. A very good result was obtained. Whether the paralysis is complete or not it is best not to set the foot at right angles to the leg because this makes the wearing of an ordinary heel uncomfortable and prevents the active gastrocnemius from coming into action during walking. If the foot is set at 90 degrees there is a range of passive dorsiflexion of from 90 to 80 degrees and the gastrocnemius acting through even this small range gives some spring to the gait.

The patient walks with an ordinary boot without a lump and have no pain. In none of the cases has arthritis developed.

The operation permits a certain range of movement at the ankle joint enabling the gastrocnemius to come into action during an important phase of the step forward and at the same time keeps the foot up sufficiently for it to clear the ground. Only the subastragaloid joint is arthrodosed.

S. C. WOLDENBURG, M.D.

FRACTURES AND DISLOCATIONS

Conwell H. E. The Treatment of Acute Comminuted Fractures About the Elbow Joint. A Report of Sixty Cases. *South M. J.* 1927, 31, 579.

Cohn I. Fractures of the Upper Third of the Ulna. *South M. J.* 1917, 21, 585.

Shipley A. M. Open Reduction of Fractures of the Forearm. *South M. J.* 1917, 21, 59.

CONWELL reviews cases of comminuted fractures about the elbow joint with severe trauma of the soft parts. In all the treatment was carried out in a comparatively simple traction device designed by him.

The average time of hospitalization was thirty-two days. The end results were less satisfactory in industrial cases than in civilian cases. The author effects immediate reduction under general anesthesia regardless of the condition of the soft parts. The arm is then put in traction in abduction with the elbow flexed to the maximum and the flexion is increased daily until full flexion is obtained at about the fifth day. On the fifth day extension is begun and reaches the maximum on about the twelfth day. Active motion is begun as soon as possible. Physiotherapy in the form of heat and massage is begun after the fifth day.

In all of the cases reviewed a Wassermann test of the blood was made immediately after the injury. Of the fifteen cases in which a positive reaction was obtained twelve gave negative reaction a few days after the injury.

CONWELL states that traumatic ankylosis is of the elbow is not an uncommon sequel of fractures about the elbow. There are certain types of fractures that will regularly result in partial or complete ankylosis unless definite effort is made from the onset to prevent disability. One of these is a fracture of the ulna particularly of the upper third.

In fractures of the upper third of the ulna reduction of the deformity is essential. When the deformity is reduced no limitation of motion results. If it is not possible to maintain the reduction open operation is advisable.

Fracture of the upper third of the ulna should be treated by hyperflexion of the elbow.

Maintenance of the normal carrying angle is essential for a perfectly functioning elbow. Anything which will permit greater freedom of the ulna in a lateral direction considerably alters the carrying angle.

In fractures of the upper third of the ulna there is a definite pendulum swing of the upper fragments to the radial side. This is due in part to contraction

Direct blows on the great trochanter do not fracture the femur but if the force is great enough cause fractures through the acetabulum

S C WOLDENBURG MD

Angelelli O Traumatic Luxations of the Knee
(Le lussazioni traumatiche del ginocchio propriamente dette) *Chir d organi di movimento* 19 7
n 435

Angelelli reports the case of a man of thirty six years who fell from a height of about 10 meters striking violently on the postero external surface of the left leg and heel with the leg in extension. The roentgenogram showed a forward dislocation of the tibia on the femur. When this was reduced and splinted the patient recovered with the joint in good position in twenty days.

Luxations of the knee joint may occur forward backward laterally inwardly outwardly antero laterally or as the result of rotation. The author performed experiments on cadavers to determine the mechanism of their production. In complete anterior and posterior luxations produced experimentally by indirect action he found more or less extensive lesions of the capsule at its anterior posterior or lateral insertions depending upon the kind of luxation produced. There were always lesions of both of the crucial ligaments the anterior one being most frequently detached from its tibial insertion and the posterior one detached from its femoral insertion. Partial detachment of the patellar ligament from its tibial insertion was frequent whereas total detach-

ment or detachment from its femoral insertion was rare. The lateral internal ligament was almost always detached from its tibial insertion. The external lateral ligament was usually intact but in a few cases was partially detached from its tibial insertion. Not infrequently the head of the fibula was dislocated. The posterior ligament was the most resistant in only a few cases was the middle part of its tibial insertion detached. The semi-lunar cartilages were usually detached from their anterior or posterior insertions according to whether the dislocation was anterior or posterior.

Unruch says that complete anterior dislocation of the tibia by indirect action can be produced by flexion combined with movements of rotation and lateral strain and the author found this mechanism effective in his experiments. Malgaigne's mechanism of forced extension was not effective in producing anterior luxation but caused posterior luxation. The author was able to produce anterior dislocation by forced hyperextension combined with movements of rotation and lateral strain. The experiments give a very good idea of the mechanics of the knee joint the resistance and elasticity of the different ligaments and the approximate intensity of the trauma necessary to produce the various dislocations. They show also the importance as in all trauma of the constitution.

The treatment of all forms of dislocation of the knee joint is reduction and immobilization for a few days followed by early mobilization and massage.

AUDREY G MORGAN MD

SURGERY OF THE BLOOD AND LYMPH SYSTEMS

BLOOD VESSELS

Moni E Int acarot d Inject o s and Substances
Op que to the Roentgen Rays Wl ch Are
Sult ble for Injection (Inj cto t car t d
e t b t j t bl paq s a ay ns
N) P l Pa q 7 x 969

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ari u lts paque to the roentgen ays to find a
relati ely no to ic substa ce v h i h can be in
j ct l into the carotid a te v fo v i u l z a t i o n
th cereb r l c i r c u l a t i o n

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iodid d i f f e t solutions of str tium lithum
s l u m i l a m m n i m brom des vere tried first
l i s t r n t u m and lithum salts vere f und to be
the most opaque The to i c t v of these in different
trengths w a t s t e i f i r t n the dog and then in man
l t a f i u d t a c n man the int a venous njection
of f o m 5 to 7 c c m of a 7 per cent solut on of
strontium bromide u ed only fleeting unple sant
v m p t o n

When th o l i l e ere te ted rubidium and
s l u m i o l i l e r e f u l t o be f v a l u e Sodium
iod de m s p r e c t solutio best and in ca l a v e r
experiment o f a u e t the o n g e n r y s

These ub tanc h i e bee njected into the caro
t i l f d o g l y m e n In th latter they demonstrated
th c b l v e l

The result f th experiments a e to be g ven in a
futu e rep o r t M c A F L M x M D

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9 l 5

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obliteran e n a t th M v o C l i n i c h e been p e
v o l v l a g n l c r e c t l

The h c t e i t l e i an inflammatory
t l o m b o n l i n g n t l v the large v n and
arter but als th hae t b r a n c h e

The cause f th l e a c i u n k v n In m s t
c a e th t r s t m p t m appear n the l e e x
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n i n e t y f u c a o b s c e d t h M v o C l i n i c e e
th e r s y m p t m l u to t l e s i o n of the p p e
e x t r e m i t e In f u r the l e s i o n in the h a d a
the o u t a l n g c l i n i c a l o b e t h o n l p r e t l y
the h a n d s e e v l e d p r m a l y The e f o u r
c a e a e r p t i l e c a u e t h r o m b o a n g u t i o b l i t e r
a n of the h a n d l f e q u e n t l y l a g n e d i n c o r r e c t l y

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(1) pulseles vessels (2) signs of vascular insuffi
cie cy and (3) vasomotor phenomena Constant
a b s e n c e of p u l s a t o n in one of the main v e s e l s
without signs of vascular insufficiency or a h i s t o r y
of p r o g e s s i v e involvement is suggestive of a well
compen a t e d organic les o n but alone is not s u r
e n t evidence for a d e f i n i t e diagnosis A diagnosis
f p r i m a r y functional vascular d e s e a s e is j u s t i f i a b l e
o n l y when no signs of an organic affection can be
f u n d

Organic vascular affections often start with a o
motor disturbances and these alone may be present
n the early stages Intermittent pallor and cyanosis
i n i t i a l symptoms of thrombo angitis obliterans
of the hand and are frequently mistaken for symp
t o m s of Raynaud's disease In the case of a male
v i t h a vascular affection thrombo angitis ob l i t e r
a n s should b s u s p e c t e d even in the presence of p u l
s t n g v e s e l

In the upper extremities arte al n s u f f i c i e n c y
f o m thrombo angitis ob l i t e r a n s is more common
than arterio clerotic endarteritis It rarely leads to
g n g r e r e of more than a f e fingers In nearly all
cases the l o e r l i m b s are affected sooner or later
The p o c e s localized in the lower extremities is
usually much more mutilatng Therefore in a l
c a e s of thrombo a n g i t s ob l i t e r a n s of the hand
p r e c t i c e measures to the lower extremities are i
d i c a t e d e e f i c i n a l evidence of the r n v o l e m e n t
l a c k n g R O B E R T M G R I E R M D

McPheete H O The Inject on Tre t m e t f
V a c o s e V e i n s b y the Use of Scler i g S o l u
t i o n s S g G E O b l 9 7 l 5 4

This e p o r t is b a e d u p o n t h e c l c a l r e l t s o b
t a i n e d i n t h i r t o c a s e s of varicose veins in wh c h
a p p r o x i m a t e l y 8 n j e c t i o n s of a sclero n g s o l u
t i o n w e r g i v e n The auth r d a s s the f o l l w n g
c o c l u s i o

1 The results n d a t e that the i n j e c t i o n t r e a t
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s o l u t i o n i s u p e r i o r to o t h e r m e t h o d o p e a t i v e o r
n o p e a t i v e

The danger of death from embol m t h o u g h
t h e o r e t i c a l l e r p r e s e n t is p r a c t i c a l l y and c l n
c u l l y a l m o s t n i l

3 The t r e a t m e n t is a m b u l a t o r y p e r m i t t i n g the
p a t i e n t to c n t i n u e h i s u s u a l w o r k

4 The p t e n t is s p a e d e x p e n e a s h o p t a l b i l
l a e a o d d and he is not compelled to l e a v e h
w o r k f o r f o u r to s i w e e k s

5 If a correct technique is used s l u g h n g c a
be a v o i d e d

6 The cramp like pains through the leg d t a l
to the site of i n j e c t i o n are no more severe than
many patients e p e r i e n c e d a i l y

7 It is a simple matter to repeat the treatment if the varicosities recur

8 Unless blood can be repeatedly drawn back into the syringe the solution should not be injected

9 The results are so uniformly satisfactory and obtained so easily and with so little risk to life that the injection method bids fair to replace surgical excision

Dumas A and Ravault P. A Physiological and Histological Study of the Circulatory Conditions in the Left Lower Extremity in a Case in Which the Femoral Artery Was Ligated in 1870 (Recherches physiologiques et histologiques sur les conditions circulatoires au niveau du membre inférieur gauche où a été exécutée une ligature de l'artère femorale en 1870) *Lyon chir* 19 7 387

When examined in 1925 the patient whose case is reported (a veteran of the War of 1870) was still able to walk though with difficulty. The left leg had atrophied but its temperature was normal and there was no gangrene. The blood pressure in the dorsalis pedis was reduced to less than a third of that on the opposite side.

On the death of the patient from influenza the following year dissection revealed complete obliteration of the left femoral artery at the site of ligation (upper part of the triangle of Scarpa). Immediately above the ligation the vessel was greatly reduced in size and its lumen obliterated. The muscular fibers of the media had also disappeared but the elastic framework of the adventitia was preserved intact. Below the site of ligation the artery progressively increased in size eventually attaining its normal volume and structure and showing in the gradual regeneration of its contractile tissue one of the niceties of functional adaptation.

The approximately normal caliber of the popliteal and tibial arteries on the injured side gave further evidence of the successful establishment of a collateral circulation. Although the increased resistance offered by its multiplicity of smaller vessels was responsible for the decrease in the pressure in the dorsalis pedis and for the moderate degree of muscular atrophy, the collateral circulation had been adequate to keep the local temperature normal and to prevent the development of gangrene.

MINA A. GILDERSLEEVE

Leriche R and Fontaine R. The Discordance Between Local Hyperthermia Following Sympathetic Neurotomies and the Findings of a Study of the Arterial Circulation in These Cases (De la discordance existant entre les hyperthermies locales consécutives aux neurotomies sympathiques et les résultats de l'étude de la circulation artérielle dans ces cas) *Presse Méd* Par 1927 xxxi 971

In accordance with the theories of Bernard it has been assumed that the local hyperthermia resulting from sympathectomy is due to the local active vasodilatation of the arteries. The authors believe that this theory is not correct for although the in-

crease in the local temperature and the vasodilatation appear simultaneously after the operation the vasodilatation soon ceases whereas the temperature increase persists for some time. Moreover the circulatory response as measured by the Pachon oscilometer is sometimes just the opposite of what is to be expected from the thermal condition of the part. These facts indicate the necessity for careful physiological study. No explanation is offered for them.

MICHAEL L. MASON, M.D.

BLOOD TRANSFUSION

Dyke S. C. The Determination of Compatibility in Bloods. *Lancet* 192 cxvii 910

In the selection of a donor for transfusion it is essential to test the recipient's serum against the red cell of the proposed donor. This should be carried out carefully and according to a standard technique. In addition grouping tests on both recipient and donor are desirable but little importance can be attached to them until we are more certain as to the constitution of the groups. The mere fact that a person is known to belong to Group 4 can never justify the assumption that his blood will suit any and every recipient. Matching tests are necessary for universal donors as well as for others. However as it is probable that the blood of donors of Group 4 will be compatible with the blood of more recipients than the blood of persons belonging to other groups it is desirable to have persons of Group 4 on the roster of a transfusion service. If transfusion is always preceded by matching donors belonging to other groups may also be included.

SAMUEL KAHN, M.D.

Tzavaru S. and Mavrodin D. The Quick Arrest of Genital Hemorrhage in the Female by the Injection of a Concentrated Solution of Sodium Citrate (L'arrêt rapide des hémorragies génitales de la femme par les injections de solution concentrée de citrate de soude) *Presse Méd* Par 19 7 xxxviii 986

The authors use sodium citrate solutions for hemostasis in the menorrhagia of virgins and the bleeding associated with uterine carcinoma and other genital conditions in the female. They state that the agents generally employed today for hemostasis—ergot, hydrastis, hamamelis, adrenalin, stypticine, gelatin, calcium chloride and the various era and organic preparations—have not proved to be of constant value and roentgen castration, periaarterial sympathectomy and hypogastric ligation are not always possible.

Following a review of the literature on the use of sodium citrate in gynecological hemorrhage and a summary of its indications the authors report six cases exemplifying the diverse conditions in which it is of value.

In Case 1 there was an abundant menorrhagia of one week's duration the uterus was enlarged and the adnexa were swollen on one side and cystic on the other. One intravenous injection of 15 c.c. of

7.30 per cent solution of sodium citrate stopped the bleeding in 10 hours

Case 2 was a case of metrorrhagia of three weeks duration associated with a cervical polyp. After the injection of 10 ccm of sodium citrate the bleeding stopped in three quarters of an hour. Operation was also used.

Case 3 was a case of operable carcinoma of the cervix. Three injections of 10 ccm of sodium citrate during the first 14 days of treatment led to cessation of the hemorrhage. The bleeding did not recur in the 110 months the patient was under observation.

Case 4 was a case of bleeding at the meophrase in the absence of a demonstrable pathological change. The bleeding ceased after the injection of 10 ccm of sodium citrate separate in an interval of 14 hours.

Case 5 was that of a man with a strongly positive Wassermann reaction and a metrorrhagia. Three injections of sodium citrate after treatment of the syphilitic treatment with benzol.

Case 6 was a case of menorrhagia and metrorrhagia of three months duration associated with a uterine fibroid. The abnormal bleeding was stopped by one injection of 10 ccm of sodium citrate.

The author does not claim that sodium citrate should replace therapeutic measures against the cause of the hemorrhage but maintain that it is an immediate fallible hemostatic and far superior to all other methods employed.

The solution is made up of 30 gm of sodium citrate 10 gm of magnesium chloride 100 ccm of distilled water. It may be injected intramuscularly or preferably intravenously. The dose is from 0 to 5 ccm of the 30 per cent solution. A dose may be repeated once or twice. The dose for a man of 60 kgm seems to be about 15 gm. This amount is not exceeded by the dosage mentioned. Unto a symptom appears. There may be pain, malacceleration of the pulse, pallor, a tendency to omit headache, a lighter in the temperature, metallic taste in the mouth, the sensation of electric shock in the arm and leg, and restlessness at night but these do not occur often are not too serious and can be prevented by injecting the solution slowly.

As the mechanism of action of the sodium citrate is bound up with the complex problem of blood coagulation, only hypotheses can be given with regard to it. The authors suggest that the citrate may effect hemostasis by (1) decreasing the viscosity of the blood (2) decreasing the coagulation time (3) increasing the fluidity of the blood (4) increasing the spilling (5) destroying the blood platelet (6) by eliminating a substance which favors coagulation (7) activating coagulation at the site of the bleeding and (8) neutralizing the product of bacterial action and its utilization when the condition is inflammatory.

M. C. L. MASO, M.D.

LYMPH VESSELS AND GLANDS

Hanford J. M. Roentgen Ray Treatment of Tuberculous Cervical Lymph Glands. A Study of 141 Patients Treated by Smith and Dooley's Filtered Roentgen Rays. Follow Up Report. J. A. H. S. G. 1937.

Since 1917 the author has treated 141 patients with the roentgen rays. The group were not selected except that persons with active pulmonary tuberculosis were usually rejected. The dose of radiation used was small being about one third an erythema dose of rays filtered through 3 mm of aluminum. The treatments were repeated at intervals of 2 weeks and the usual number of treatments was 10. The lesions were divided into (1) large glands (over 2 cm) (2) small gland (3) cystic swelling (4) colic abscesses and (5) sinuses. The results are summarized in the table.

Forty per cent of the cystic swelling resolved without incision or spontaneous opening. The colic abscesses all resulted in sinuses.

The author concludes that tuberculosis of the cervical lymph glands is primarily a surgical problem but small doses of roentgen ray treatment as given in the cases reviewed appear to shorten the course of the disease and favor improvement in all stages. In a large percentage of cases except those of cold abscesses. No undesirable effects were noted. This treatment compares favorably with a variety of other conservative measures but adequate data on all methods especially follow up results are lacking.

C. L. H. H. CO. M.D.

Glenn H. M. The Surgical Treatment of Tuberculous Glands of the Neck. J. A. H. S. G. 1937.

Of 40 cases of tuberculous neck glands, 13 were diagnosed as confirmed at operation. In 9 cases the diagnosis was doubtful but in 7 of the tuberculous cases. Ninety three of the patients were female. 10 were under 30 years of age and 28 were over 30 years of age. 19 of the 85 cases had the location of the condition was situated in the bilateral. Most of the cases operated upon were advanced in the disease were discharged as sinuses. The latter had elapsed in 18 cases and 14 of these a tonsillectomy and adenoidectomy had been performed. In the latter there was only 1 case of tuberculosis of the tonsil.

Primary disease occurred only 29 cases. The chief complaint was usually the unsightliness of the condition.

Tuberculosis of the cervical gland must be differentiated from acute non-tuberculous adenitis. High surgical disease branchial cysts thyroid enlargement and malformation.

Acute tuberculous adenitis occurs suddenly following some other infection. It usually comes from 4 weeks in length. It then subsides or an abscess is formed.

	N	I d t t M	F mb tm t	F p id tm f M	Slight m t		M p k d m t		App d tly		M fit k dly b pp ed	
					N	cr	N	cr	N	cr	N	cr
T t			9 4	6 56	4	9	33	3 4	67	47 5		7 9
La g gl d	68	39		8 3	9	8	4	35 3	5	56 7	49	7
Sm ll gl d	47	4 5	8 6	6 3		3		3	7	57 4	37	18 7
Cy t well g		36	8	4 4								
C ll b	9	6	7	4 4								
S	56	6 8		8 8	3	3		76 8	43	76 8	43	76 8

In Hodgkin's disease there is usually enlargement of other glands besides those in the neck, the adhesion to surrounding structures is less marked and the spleen is frequently enlarged. Caseation and necrosis have not been noted. Biopsy may be necessary for the diagnosis.

Branchial cysts may closely simulate large tuberculous abscesses. They are usually of long duration and there may be an external opening or dimple.

Thyroid enlargement is sometimes associated with tuberculous adenitis.

Malignant glands should not be difficult to distinguish.

In tuberculous adenitis there is usually a chronic swelling with periods of remission. At first the glands are discrete but later large masses caseation and abscess formation develop. Fever is common.

In the author's cases of fluctuant cervical abscesses incision and drainage are done. The abscess is curetted, swabbed with tincture of iodine and picked. X-ray treatment after this operation has been found beneficial. If the sinus does not heal it is dissected. Excision by the radical block dissection method has been practically abandoned except in a few malignant cases of tuberculosis in which the constitutional reaction to the infection is marked and radical interference is definitely indicated to stop the progress of the disease. In all cases the greatest care is taken to preserve the eleventh and eleventh nerves. Less serious cases receive heliotherapy or X-ray treatment for 6 months before operation is

considered. When in the cases of patients over 5 years of age small groups of glands become enlarged and the enlargement persists longer than months complete removal is done. In the author's opinion postoperative X-ray treatment is of definite value in all cases. It was given in 33 of the cases which the author reviewed. Secondary infection is resistant to it and when calcification is present it is not indicated.

Old sinuses should be dissected out. If this is impossible they should be curetted, closed around a drain and given X-ray treatment. The original source of the infection should be eradicated before the glands are treated.

No one plan of treatment will effect a cure in all cases. The use of heliotherapy, radiation and surgery should be adapted to the requirements of the particular case. For the average patient who cannot afford prolonged hygienic treatment surgery seems the method of choice. When operation is done great care should be taken to preserve the eleventh nerve and the lower branch of the seventh nerve. If the eleventh nerve is cut it should be sutured immediately. The operation of block dissection has been practically discarded because of the deformity resulting from paralysis of the trapezius. Secondary innervation from the upper cervical is not to be relied upon for satisfactory function.

In the cases reviewed there was no operative mortality and the follow up of the patients has shown excellent results. JAMES B. BROWN, M.D.

MISCELLANEOUS

CLINICAL ENTITIES—GENERAL PHYSIOLOGICAL CONDITIONS

Le 1 s D Spontaneous Gang ene of the Ext em
tle 1 / 5 g 0 6 3

Spontaneous gangrene occurs in the old and the relatively young hence its clinical classification as senile and presenile gangrene. These two types are dependent upon entirely different processes one a *degenerative process* and the other an *inflammatory process* an arteritis or because of the almost constantly associated involvement of veins a thromboangiitis. Pathologically arteriosclerosis and thromboangiitis are distinct.

In 139 cases of spontaneous gangrene of the extremities reviewed by the author there were 47 cases of arterio sclerotic gangrene, 43 cases of arterio sclerotic gangrene associated with glycosuria, 7 cases of gangrene occurring in diabetic persons in whom the arterio sclerosis if present were not pronounced enough to attract attention, 14 cases of thrombo angitis obliterans, 1 case of scleroderma and 7 cases in which arterial changes may have been a contributory factor in the gangrene but the principal part was played by infection.

ARTERIOSCLEROTIC GANGRENE

The more frequent occurrence of gangrene in the lower than the upper extremities may be determined by the arrangement of the vessels in the lower extremity. Not enough attention has been paid to the extent or location of the thrombus or occlusion. Embolism or thrombosis of the popliteal artery is practically always followed by gangrene. Statistics seem to indicate that in 50 per cent of the cases of senile gangrene the large vessels of the extremity are occluded. In the 47 cases of senile gangrene in which there were 9 deaths, a mortality of a little over 9 per cent. Three of the patients died of pneumonia, 3 of embolism and of myocarditis. The cause of death is not stated. Twelve of the patients left the hospital with their wounds healed. The wounds of the other patients were granulating but they healed subsequently.

Amputation through the condyles—C dens transcondyloid amputation—is satisfactory in the e cases

ARTERIO SCLEROTIC GANGRENE WITH GLYCURIA
(DIABETIC GANGRENE)

It has been conclusively demonstrated that hypoglycemia with associated metabolic change is not the only factor predisposing to gangrene.

In persons with diabetes arterial changes are common

Accumulating evidence indicates that the so-called diabetic gangrene is due to arteriosclerosis. It is less dependent primarily on the same causes as arteriosclerotic gangrene but is complicated by hyperglycemia. The cases reviewed show that gangrene develops in diabetic persons about a decade earlier than in persons with uncomplicated arteriosclerosis. The average age at which gangrene appears in diabetic persons is 54.4 years while the average age at which ischemic gangrene appears is 66.2 years.

TEPOMBO ANCHITS

G ng e e occurr ng in the relatively y ung—the pre nile type—p esents a life ent picture from 7 te to cler t g ngreng with glycosuria. Its onset may be characte ed by 1 te nittent claudication and y npt ms referable to the deep e sel or by the appearance t st of t ophic change. Ore of the most str l k ng cha ges is the exten e collateral circulat on which may de elop. Wh le some collateral c culat on m v develop n a teriosclerosis it is not marked.

It seems probable that the clinical course of thromboembolic obliterans may be determined or modified by the site of the thrombus. A thrombus originating in the femoral artery and descending is less apt to cause gangrene than a thrombus occurring in the ante- or posterior tibial arteries and ascending to the popliteal artery.

The indication in the treatment seems to be to force the cell into a culture ahead of the advancing thrombus. In 4 of 7 cases in which ligation of the femoral artery was done the cell did not improve. In 1 case it was done after the development of gangrene subsequent amputation was necessary. In 1 case it was followed by death from hemiplegia after 36 hours.

The pain of thrombosis is due undoubtedly to a release of factor. It may be a true arterial pain. In all the cases reviewed the pain was controlled. The operation places the indamed artery to rest. The final result will depend upon whether or not the collaterals which develop are diseased.

C L R S E I K E M D

Wom k N A Sibungual Melanoma II tchln
n M I tic WI tlo 1 h 5 g 19 7 x
6

The subungual melanoma appears to be a more frequent entity than generally believed. Of twenty subungual melanomas treated at the Barnes Hospital, St. Louis, four were melanomas of the nail bed.

Of the four reported by Womack two occurred on the thumb and two on the fingers. A history of trauma was given in two cases. Finger amputation was done in all instances and was supplemented by dissection of the avilla in two. Two patients were living and well two and four years respectively after the operation. In one case the condition recurred within eight months. One patient cannot be traced.

These lesions form black fungating ulcerating masses in which histologically two types of cells are to be distinguished: (1) spindle cells which form interlacing cellular masses containing a moderate amount of intracellular and extracellular pigment and (2) polygonal or spherical cells which frequently show mitoses and contain less pigment than the spindle cells. The author agrees with Bloch that these tumors are probably epithelial in origin.

When these tumors follow trauma as is often the case they are usually not pigmented at first. Glandular involvement may occur early or may be delayed for many years. Melanomata occur most frequently after the fortieth year of age and in the thumb. They are found next most frequently in the fingers and least frequently in the toes. Early amputation with removal of the regional lymph glands is advised. The prognosis is grave. Death usually results from metastases. MICHAEL L. MASON, M.D.

Slye M. Some Observations in the Nature of Cancer. Preliminary Report. Studies in the Incidence and Inheritability of Spontaneous Tumors in Mice. *J. Cancer Res. Clin.* 1927, 1: 135.

There are apparently two factors necessary to produce cancer: (1) an inherited local susceptibility to the disease and (2) irritation of the right kind and in the right degree applied to the cancer susceptible tissues. In her experiments on animals Slye has found these factors the only ones necessary for tumor formation. Accordingly she believes that there is no need of the assumption of a cancer germ.

By selective breeding Slye has produced resistant strains which among thousands of animals have never shown one instance of tumor of any sort, either malignant or benign. She has bred also mice which are susceptible to cancer and show only one type and one location of neoplasm, such as adenocarcinoma of the mammary gland, spindle cell sarcoma of the kidney, osteosarcoma of the leg bones, etc. The study here reported dealt with the latter.

Slye has been trying to eliminate either the cancer susceptible factor or the irritation factor to see whether cancer can thus be avoided. She found that in the case of a mouse which belonged to a resistant strain a wound such as that caused by a blow from a cage door produced only scar tissue which eventually was partly or wholly absorbed leaving no unfavorable results. The susceptibility to cancer is local, not systemic and injuries only to those organs or tissues that are susceptible to cancer caused neoplasia. In animals susceptible to subcutaneous sarcoma a rapidly growing sarcoma frequently fol-

lowed a body blow. In those susceptible to skin cancer an epithelioma sometimes followed trauma. On the other hand in animals not susceptible to breast cancer no amount of trauma to the breasts would cause breast cancer.

These findings require heredity to explain them and are against the theory that cancer is due to a specific germ.

The mice which develop early breast cancers are uniformly among the largest and strongest specimens and show no signs of illness at the time of tumor development. The tumors grow to huge size with very little systemic change and only later when infection and the absorption of dead tumor takes place does cachexia develop. There is no germ disease in mice that is thus free from toxæmias and consequent systemic change.

In general cancer has not interfered with reproduction whereas any infection seriously interferes with reproduction. In Slye's laboratory no mother with any infection has ever brought to birth a large litter of strong normally developed non-infected young. On the other hand previous to the time when secondary infections set in or the cancers have broken down the cancerous mothers uniformly have borne strong uninfected young with a normal life span and normal reproductive potency. These healthy young born of and nursed by mothers with cancer never have cancer either in infancy or later if the father is resistant to cancer as cancer resistance is dominant over cancer susceptibility. On the other hand the nursing young of an infected mother commonly contract the infection. This is another marked contrast between cancer and known infections.

The general and special growth propulsion which pregnancy stimulates also seems to stimulate the occurrence of breast cancer in susceptible females. The growing embryo however soon takes precedence over the early carcinoma as it does over everything else and during the gestation period the tumor growth is retarded. Infection tends rather to decrease all growth processes including those of the embryos.

In animals having an anteroposterior axis growth is more rapid at the anterior pole of the axis. This parallelism obtains also in the growth of cancer in these animals. It has been noticed that nearly all internal tumors and breast cancers consistently show the greatest amount of growth along this axis or at the anterior pole of the anteroposterior axis of the tumor. Cancers in the anterior mammary gland for example generally show the most rapid growth at the anterior end although there is more room for extension posteriorly. Cancer is but a mode of growth probably of regenerative growth. There is no such relation between the rate of extension of inflammatory conditions and the anteroposterior axis or the anterior pole of this axis.

These facts together with others such as the non-contagious nature of cancer, the multiplicity of

widely divergent types of irritation which occasion spontaneous cancer and the many strikingly different methods by which experimental cancer can be induced seem definitely to point away from the germ theory of cancer

Tendency to susceptibility and immunity to infections probably exist but do not behave in the same way as preence of defense unit characters such as albumin and pigmentation for example. On the other hand just as true albumin is the total lack of the pigment making mechanism spontaneous cancer has consistently behaved in the same way as the absence of a mechanism fitted to control proliferation and differentiation in re-encratic processes. If an animal has the controlling mechanism uniformly throughout his tissue he is resistant to cancer. If he lacks this controlling mechanism he is locally susceptible to cancer.

In conclusion state that no observation made during the eight years of this work has ever been consistent with the germ theory of cancer.

HARRY C. S. L. STEIN M.D.

Skokolov N. N. The Changes in the Histological Structure of a Cancer Following Section of Its Sensory Nerve Supply and the Influence of the Neurotomy on the Course of Various Pathological Processes. (Urbach, D. N. M. H. T. G. H. B. D. K. B. H. L. T. H. Du. H. T. U. L. G. D. L. B. E. Flu. D. N. O. L. M. F. D. V. I. F. H. D. R. P. T. H. L. H. R. P.)
D. T. K. Z. I. F. C. H. 9

Skokolov has tested out Molotkoff's hypothesis of the neurotomy of cancer and Molotkoff's recommendation to treat the condition by neurotomy of the sensory roots and nerves supplying the tumor mass. He performed the latter operation forty-four times on thirty-nine subjects. He found that in some cases the neurotomy of the sensory nerve had no influence whatever on the growth or structure of the cancerous tumor and in others increased its rate of growth. He concludes that the operation itself is not sufficient matter should be performed only in desperate cases with severe neuropathic pain. In the case reviewed Molotkoff's hypothesis is concerning the neurotomy of cancer was not substantiated in any manner.

In cases of chronic ulcer neurotomy of the sensory nerves had a quick effect but recurrence were not uncommon even after complete healing. As neurotomy lowers the resistance of the tissues it may result in extensive necrosis subsequent on and even festers.

RIEDER (Z)

Wood F. C. Combined Radiation and Lead Therapy. J. I. M. 4, 3, 1, 0

In a recent article Blair Bell stated that he had gained the impression that a combination of lead suspension and injected at a suitable interval and a suitable dose increases the effectiveness of the

neoplasms to the action of the roentgen rays. In experimental work with animal tumors Wood obtained evidence confirming Blair Bell's findings. In this article Wood reports the results of a continuation of his investigation.

It has been suggested by Mayer that the injection of de-trose might stimulate the tumor cell to divide and that irradiation following such injections would be more efficacious as it would reach the cells during their divisions. According to Wood it is certain that no astonishing effects can result from injections of de-trose and that if the tumor is stimulated by such injections they would always be associated with the use of stimulating unknown metastases in some region of the body where roentgen irradiation is not given.

In Wood's opinion the action of the lead is solely a toxic one. A large series of experiments by Holthusen and others have cast grave doubts on the possibility that such minute amounts of metal as are used can act as a radiator of secondary rays. It is more probable that the lead poisons the tumor to a certain extent and the roentgen ray carries the destruction still farther.

Wood's findings are summarized as follows:

1. In a rat carcinoma of high virulence the combination of lead and roentgen rays is more effective than either lead or the roentgen rays alone.

In a rat sarcoma of still greater growth capacity no such increase in the effectiveness of the roentgen rays can be observed.

3. In a preliminary study of the effects of the addition of de-trose to the lead mixture and of preliminary injections of de-trose followed by lead therapy de-trose did not seem to increase the efficacy of either the lead or the roentgen rays.

MORRIS H. KAHN M.D.

Ullmann H. J. Colloidal Lead and Irradiation. C. N. C. Ph. 4, 1, 9, 7, 1

Ullmann has come to the conclusion that lead has a marked effect on certain tumors and that one of its effects is to render the neoplasm distinctly sensitive to irradiation. This sensitivity becomes apparent some little time after the administration of an appreciable amount of the lead. Two illustrative cases are reported.

MORRIS H. KAHN M.D.

SURGICAL PATHOLOGY AND DIAGNOSIS

Dudgeon L. S. and Patrick C. V. A New Method for the Rapid Microscopical Diagnosis of Tumors. An account of 200 cases. Ex. M. Ned. B. I. J. S. 9, 7.

The authors describe a new method for the rapid microscopic examination of neoplasms and inflammatory tissues in the operation of which the almost perfect preparation of the tissue for the diagnosis is made almost entirely without

knowledge of the clinical findings or the microscopic appearance of the new growth. In 200 examinations there were only 9 errors and only 6 of the latter were serious.

The freshly cut surface of the tumor or other tissue is scraped with a scalpel and the milky juice so obtained is spread evenly on slides. While still wet the films are placed in Schaudinn's fluid where they are fixed for from two to ten minutes. On their removal they are washed first in alcohol and then in distilled water. Mayer's haemalum is used for the nuclear stain and eosin for the counterstain. The films are then dehydrated and cleared with absolute alcohol and xylol and coverslipped with Canada balsam. The specimen can be prepared for microscopic examination in ten minutes.

The results in the 200 cases examined are arranged in tables according to the organs and systems from which the specimens were obtained. With the exception of the nine errors the film diagnosis agreed with the paraffin section diagnosis especially as regards malignancy.

The authors emphasize that the perfect fixation of the wet cells in Schaudinn's fluid demonstrates the structural details in a manner not possible in paraffin sections. The cytological structure of malignant and other cells and the arrangement of the cells in the wet film preparation are described in detail. In the examination of postmortem specimens this method is unsatisfactory on account of autolysis.

The microscopic appearance of the tissue prepared by the method is shown in six photomicrographs.

J. EDWIN KIRKPATRICK, M.D.

Lewis W. H. The Vascular Patterns of Tumors *Bull. Johns Hopkins Hosp. Balt. 1927, vol. 156.*

Five different types of rat tumors were injected with 3 per cent India ink. From one to four tumors of each type were used with somewhat varying results as regards the completeness of the injection. The vascular patterns of each type of tumor were found to be very characteristic. Those of sarcomata are quite different from those of adenocarcinomata. The three different types of sarcoma differ from one another grossly histologically and angiologically and a glance at the vascular patterns is sufficient to identify each one.

The tumors studied arose spontaneously in Walker's rat colony in one strain of rats (Strain P).

The technical procedure was as follows:

Under ether anesthesia the thorax was opened and from 4 to 10 c.c. of blood were withdrawn from the heart with a syringe. Through an incision in the left side of the heart a cannula was introduced into the aorta and from 50 to 100 c.c. of 3 per cent India ink in Locke solution were run into the body with a gravity pressure of 10 to 3 ft. The tumors were then cut out and put into 10 per cent formalin free hand and microtomic sections were run through 50, 70, 80 and 95 per cent alcohol cleared in modified Eycleshymer fluid (carbolic crystals

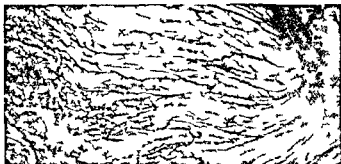


Fig. 1. Vascular pattern of spindle cell sarcoma. Capsule (c). Note absence of large afferent and efferent vessels.

one part oil of bergamot two parts and cedar oil two parts) and mounted in balsam. Ordinary hematoxylin and eosin sections were also made. Two fibrosarcomata, one spindle cell sarcoma, three round cell sarcomata, one adenofibroma and four adenocarcinomata were injected.

The vascular pattern has apparently nothing to do with central necrosis as noted in the adenocarcinoma. Necrosis is due apparently to failure

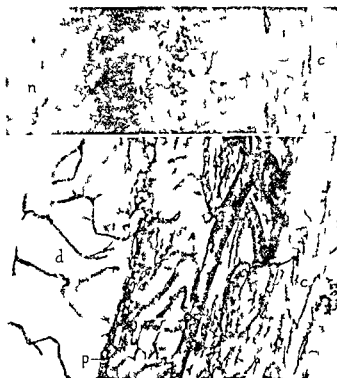


Fig. 2. a, b, c. Section of Walker round cell sarcoma. Capsule (c), necrotic center (n). Note terminal capillary plexus (p) near inner edge of living tissue. Between necrotic center and shell of living tissue is a dark band of microphages.

Fig. 3. below. Vascular pattern of Walker round cell sarcoma (Fig. 3). Note rich supply of afferent and efferent vessels in the shell of living tissue. A few capillary loops extend beyond the terminal capillary plexus (l) into degenerating area (d). Capsule (c).

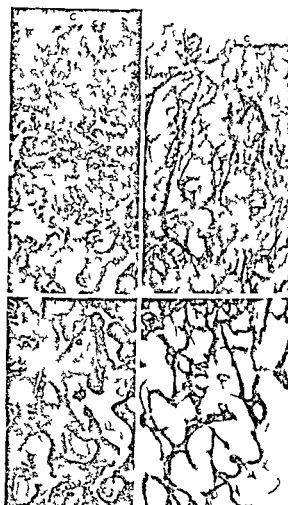


Fig 4 b S t f W l k d t b m
Fig 5 v c l p tte of t m F 4

of the endothelium to follow the growth of certain strands of tumor cells carcinoma

It seems not unlikely that each type of tumor has a vascular pattern peculiar to it just as does each organ in the body. The diagnosis of the type of tumor can probably be made as readily from the vascular pattern as from ordinary sections

I 6 d l f t b a d b e l S t of W l k d
m S u p i a l a d d p C p l (c)
Fig 8 p p g h t v c l a p t t m f t u m o F i g 6
d 7
F o l g h t v l p t t e f d e p g of
t m f F o d 7 N o t d i l k c i r c l t n

The blood vessels do not determine the growth of the tumor but the tumor determines the growth and the pattern of the vessels

J H N J M A L M D

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NOTE.—THE BOLD FACE FIGURES IN BRACKETS AT THE RIGHT OF A REFERENCE INDICATE THE PAGE OF THIS ISSUE ON WHICH AN ABSTRACT OF THE ARTICLE REFERRED TO MAY BE FOUND

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 t t t d a s e s f t h e f e m l p r o d u c t i v e g a n s E
 V c Med Klinik 96 xxi 949 986
 What th most f q n t e u f l m b w m a n ?
 F KERMAUNER W n l h n W h n c h 197 156
 C o t b t o n t h e b o h m i s t r y f m n t r u t n K
 KLAUS B h m Z t h r 97 lxxv 3
 Then r m a l a d p t h l l p h y l o g y f m e n t r u t n
 L FRAENKEL B h f t M d K h 97 xxi 53
 I m e n t r u a l b l d i n g n c e s r y f t h e l t h f w o m ?
 B ASCHER Z t l b l f G y k 97 l 577
 I m n t r u l b l e e d g n c s r y f t h e l t h f w o m ?
 f m a l ? W L A Z O Z n t l b l f G y n k 97 l 359
 Th l p o i d f t h e m n t r u a l b l d A HERMSTE N
 A h f G y k 9 cxx 8
 M n t r u a t o n d s d M S I N E R D u t h m e d
 W h n c h 96 l h
 S m e p b l m f t h e m n t r u l f u t n t h b
 a t i o n t h l a t f t h e f f l l d r p u s
 l u t u m t p t h o l g l t h a m h B W H E
 H O U S E E d i b u g h M J 97 x E d i n b g h O b t
 S o 39 [114]
 P l m y t b u l a d t h m e n t r u l c y l F
 H E S E B t K l n d T u l k 97 l v 395
 D y m n h e r L G R A V E K n t k y M J 97
 x 58
 E p h d (M r l) t m u l n t f t h y m p t h t i s n
 g y l y p t u l a l y n d y m r h o e O L A N G
 Z t l b l f G y n k 97 l 43
 E x p n s v i t h p m p n d m h o e a n d
 t h p t n d u t f t h g t l n r y n d d
 t o T E C H M n h n m d W h h 97
 l v 76
 V m n d t t o n n g t d y m h o e a
 K O T T E F t h d M d 97 l 469
 D t h e r m y n d m n t r u t t h p t u l f n
 t t h u o f d i t h m y n d y m r h o e I V O N B U E B E N
 Z t a l b l f G y n k 97 l 44
 M n t r u l d i t b n t h f d i I
 S k n d i a s d t f q u t d t y m s t r u t
 B A C H E R W n l h W h n h 97 l 545
 A f m n h g n t a l m y o e d m
 W S C H L O S S W n l h W h h 97 l 8
 T l n u g d f f m l h y p u l m d t h
 l b u t y f i l n g t h d i t n t h p u t l l y
 P S I P P E L Z t l b l f G y n k 97 l 75
 A b n e f t h g n t l s n g l T H R u s L L
 A m J S u g 97 39
 T r u e h m p h d i m a n t b u t n t h m p t
 f t h g n a t g l n d t h t e r m t f i G A
 W A G N E R Z n t l b l f G y n k 97 l 34
 D e g t n f t h g l n d m f p u d h
 m p h r o d m H R I N C K Z t h f K n t i t u t n l 97
 l 9
 T h t a t m n t f l o h o e A P I N K U S S D u t c h
 m d W e h n h 97 l 96

The t e t m n t f l e u c r r h o e n t h g y n l a
 d o u h H H E I D L E R W i e n m e d W h n s c h 9
 l x 4
 The t e t m n t o f l e u c h o r a w t h s l n t r a t e t
 m n t H A R T O G M d K l n 197 x 756
 G r r h o e n t h f m l e A t e t h o o k f p h y a n a n d
 t e n t R F R A N Z 197 V m n S p g e
 Th d a g o s f g r h o e a w t h t h g n t t G
 K A R E S V h d d d u t h G e l l h f U l 10
 375 389
 D t r m n t n f t h e d t y f t h v a n a l s e r u
 m n c r v l g o h o e a d t h e d i g n t l f
 t h g n t e s t c t i n A H E Y N M u h d
 W e h n s c h 97 lxxv 7
 Th u r o f h c g n o h o e a t h e f m a l b y m f
 g l e u b u t a n c o u j c t i o n f l h e g 1 A
 L o S E R A m J O b t & G y n 97 30
 I d i c a t n f r s u g a l i t r v t p l a c l f
 i n f e c t g A H C U R T I S J A m M A s s 9
 lxx 91
 Th t p p h y a n d l i n e a l p e c t s f t u m f t h
 f m a l g n t l a G P A R O L I R i t l d i g c 197
 237 [114]
 C l m l b s r v t s o f h t o p c p t h c l l g t h
 K V O N O E I N G E N Z t a l b l f G y n k 97 l 61
 P e r t n l e d m t r i o d e t t h e m s t r u l d m
 t n f n d m t r i t i n t t h e p e r t o l a t y J A
 S u n s o n A m J O b s t & G y n 197 4
 Th q t n f S a m p s o n t m s J K O E E
 Z n t l b l f G y n k 97 l 70
 I d i t m y f m t h t a n d p o t o f t h g y l
 g t W F U E R S T S h m d W e h n c h 97 l
 59
 R a d t n t h a p y n g y n e c l g y H S A N D E R
 R d l R & C h u g M d R c 97 l 38
 Th u o f d i m a n g y l o y H L Y M E S t l n
 t h p 97 xvi 6
 R d i t t m n t f n m l g a n t d f t h
 f m l r e l S C B a r o w N w O r l n M & S J
 97 lxx 3
 Th t g n a y b e n i g y n c l l d M
 E H A N K S l l l M J 97 l 38
 Th p n t s t f d p t g t h p y g y n l
 g y K H R O L D D t h m e d W e h h 97 l
 84
 Th n w e t l a e t h d d w t h t t (E)
 g y n l g y d o b t t W B E N T H I N D t h
 m d W h n h 97 l 955
 Th d g f l n l f t h g t h r u l n A
 t h r v i l b t d t h p t p t
 M A D E L A M M Z t l b l f G y n k 97 l 7
 Th l y m p t g n f c t a n y s t f r m a t n t h
 p l f l l g t o t l c t a t f t h f e m l e A H A M T
 a d L C O R N I L B l l S d b t t d g y e c d p [115]
 97 488
 S a u m l a t n t h p l v i l l n g p t
 A G T I L M I N B l l S c d b t t d g y n e c d p [115]
 97 vi 487

OBSTETRICS

Pregnancy and Its Complications

C t e l m k n v g l t t f p e g n y I
 J A K L E F F Z n t l b l f G y n k 97 l 455
 Th d i a n t l b i l i t y f t h H i t t C l l n
 H M e n d a l l s R H O S T A E T T E R Z n t r l b l f G y n a c k
 97 l x

T h d t n f p g c y A L A H A R D T S c h i z
 m d W e h n h 97 l 79
 R p t f p g y f l l w g n f t h t r u
 L W H A N E S J M h n S t I M S o c 97 xx 66
 R e p t d p g n y f t r a m o r r h e n d c d b y
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 Z e t l b l f G y n a k 97 l 99

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Abdom l p g y itl l i l l i I Blat
 CAM M ts h f G buth u Gyn k 97 l
 26 Th chn l a p t l i th l g y f s d r y bdom
 n l p g y L Z KER AN Zent l b l f Gyn k
 19 l 730
 I fl m m t d t n f t l ad adun gp g a
 E H E R M t h f c buth u C v k 9
 l 43
 Tr m y l t m l t n g p g n v a d i b o r
 H H N B t M & S J 97 c 174
 B l g y d p t h l g y f t h f m l h d b o k f
 g y c l g a d b t t r i J H A L B A J L S I T A J
 VIII Pt I Ruptu of th ut u R I E t D Tr um
 n d p r a t o p h s H A M M E L A G S u d d
 d t h p g n l b n l t h i r p n u m E K N A U R
 97 B l U r b & S h b g
 T l t l y f u t p r f r t n u t t g f
 b t n I H E R Z W m d W h n l 97 l 1
 8 D t h b y h e m h g b o t o F B s Z n t l b l
 f G y n a k 19 l 9
 S y m m t i l g g n f b o t h f t a o f l e b r i l e
 b t a d t h d m t t f g y g E H E R K
 Z e t a l b l f t y n k 97 l 178
 L p o i d t e t o f t r a b t l a t r i b t o n
 t h s y m p t m t o l g y f t h f t p l t e P N E U D A
 Z t h r f G b t h C y k 927 1395
 C n f t l p r g n y V B U E B l l b o c
 d o b t t d g y n e d e P 927 x 153
 P e s y a d c f t h t i E H E R
 R e f d e g y e c t d b t 927 v i 43

Labor and Its Complications

Th i d t f l a b o a t t h n d f p g n y b y
 m f t h a d m t a t f t o l d n j t f
 l y p h y l e t a t k A D E R Z n t l b l f G y k
 97 l 40
 A t i f i l d t f l b o a t t h e n d f p n n e y
 A O T R E I L Z t l b l f G y n e k 97 l 654
 D r u f t m l t g d t a t h n g l a b p
 E G A F W i A l W h n c h 97 l 886
 R c t a l d l a t t o t m l t l b o r W N E T T E S (ZIM
 M u h m d W h n l 97 l 894
 T h o l t f l t o B A S C I N E W l
 W h n h 97 l 4
 T h e c n d t f l b I F S C H E W m e d
 W h c h 97 l x 645
 T h e c n d t f l a b R K I L R W i m e d
 W e h s c h 927 l 646
 T h e c d t f n m a l l b J W B O U L A D T r
 S t i f M 97 v 397
 S h t n g t h p n d f n m l l b A O T R E I L
 W i m d W e h h 97 l x 66
 T h i d c t f o d t h m a g m n t f t h t r i f
 l b J C W I N D E R M d J A t h 97 S p p 8
 245
 T h m g e m t f t h s o d s t g f l b r G
 F o u n l r D e t m d W h h 97 l 93
 D t m t f t h p s o f l b b y t n a l p l
 p t o n t h h d E S A C I S Z n t l b l f G y n l
 97 l 574
 T h a l c f p l p t f t h h n t h e d u c t o f
 l b r R M U E L L E R H E I M Z e n t l b l f G y n k 97
 l
 T h m a g m n t f t h t h r d t g f l b M T
 V A d l y M M t h 197 h 44
 T h d l y f t h f t e c m n g h e d O W v o
 w i t z M u n c h e n m d W h n s c h r 927 l x 1 3

U t e n e n t i t h r y s y m j t m t l g v n d e r a
 t i n M C D L G A R I S M e d J A u s t l 92 S p p 8
 5 S p p 9 57
 H e m r h g t h e d f p e g a n c y a n d u n a
 f t l b H S c a B e i t h z M e d A l 9
 183
 T i n l g h a e o f h e m t m a d r l a b o r
 n t h e b a f c y t o c p i f d i g A R E I S T Z n t l l
 f c y n k 97 l 35
 S h l l n g l u f f r n t l l h o o d o n t l l b d t
 l u r p e i m C H F U E M A N N Z t a l l f G y n a k
 97 l 44
 T h j m p t f l b l l g h t u p l t t y p h l
 F H E A V M A \ D t c h m d W h c h 97 l
 30
 A a o p h l g m u f a t i t t h i s t t h y d m
 i o n d n l b C S C I M I D Z t r l b l f G y k
 97 l 583
 M y o m f t h l o r g m n t d o t c t n o f B d l
 Z O N I G p g n t p t t V M U E L A V E a n d A
 B l S l c i r u g l C h l 927 v 8
 W h t m t h f a t h p t f l b e a l l
 t t h g a a l p r c t i n L W E H E R I T D u l s c h
 m d W h n l 97 l 92
 A m l a t o n o f t h p a f c h l l b i t h J W A T I N S
 S o u t h M & S 97 l 68
 T h t h g f t h i d u t t f t l h t l e e p t h
 o p l m e p h e d r i (M c k) n o p a t e p o d u
 F L U B I Z M u h m d W e h c h 97 l 1966
 E x p n w t h y n g t c l g i n b t c s
 W B M O U R J M d S N J s y 97 x 563
 T h l u f G t h m y a l s i m m a l l a b o
 M S N A I D I R Z e n t l b l f G y k 97 l 8
 A t n (E) o b t t n s L M A T I N M o n t h
 f G b r t h G y n k 97 l 4
 P l a t p a m u l t p l d y t i t t l l t r u
 t n t c t H P A T C R B l l o d b t t
 d g y n d I a 97 57
 D l y d l b n d a l f l t p a s n p l t
 p a t r l G L L Z t l b l f G y n k 197 l
 587
 T n w d a n t h m y m o f c e r v c l l a c e t
 d r a g l a b r 4 p l m r h y p r t J B D e l a A m
 J O b t & (s) 97 499
 C l t d r p t n u d e l r y W R o s
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Surgical Instruments and Apparatus

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Maintenance of sterility of catgut during operation H BOIT Zentrabl f Chir 1927 lii 109

Some minor modifications of Har ey Cu hing s siler clip outfit K G MCKENZIE Surg Gynec & Obst 1927 xlv 549

- A patient with ergot gangrene P CAFFIER Ztschr f Geburtsh u Gynaek 192 xci 15
- The administration of too much in ulin in surgical cases of diabetes M ROSENBERG Zentralbl f Chir 192 liv 1300
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- Cancer and the medical profession J M BIRNIE Boston M & S J 192 ccxvii 552
- Cancer and the public R W KELSO Boston M & S J 19 ccxvii 553
- National aspects of the cancer problem G A SOPER Boston M & S J 92 ccxvii 54
- Cancer and public dependents J H NICHOLS Boston M & S J 192 ccxvii 55
- The present status of studies on the etiology of cancer C LEVIN Igebn d Hyg Bakteriell Immunitaets forsch 192 viii 513
- New theories as to the cause of cancer W KOOSE Frgl n d Ch u O thop 9 7 x 547
- Cancer experimental and clinical G DOEDERLEIN Ztsch f Geburt h u Gynaek 19 xci 49
- Tissue changes following the application of tar A KORENVI Arch f p th Anat 9 ccxii 383
- Carcinoma with epithelium not found in the region C PLENGE Arch f path Anat 19 ccxiv 3
- Contribution on experimental transplantation of tumors in animal species with tumor filates and dried tumors to use F HAUF Klin Wchn chr 19 1 2
- The biometrics of animal reproduction in relation to tumors and cancers Sir J BLAND SUTTON Lancet 19 ccxii 41
- Apparent infectivity of cancer J MACLEOD Brit M J 92 vi 294
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- Cancer clinics W T HOPKINS Boston M & S J 92 ccxvii 556
- Animal experiments and the early diagnosis of cancer in man R MEYER Zt chr f Geburtsh u Gynaek 19 xcii 464
- The changes in the histological structure of a cancer following the loss of its sensory nerve supply and the influence of this neurotomy on the course of various pathological processes N N OKOLOV Deutsche Ztschr f Chir 19 ccii 0 [142]
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- Melanosarcoma G GATTER Zentralbl f Gynaek 1927 li 138
- Excision of the Rous chicken sarcoma K SCHILBA and S R BENEDICT J Cancer Research 1927 vi 164

General Bacterial Protozoan and Parasitic Infections

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- Studies on a paratyphoid infection in guinea pigs III A second type of salmonella naturally appearing in the endemic state J B NELSON J Expt Med 1927 li 54
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- Enterohemorrhagic pyrocytosis L CARPI Riforma med 9 7 xli 00
- Immunization against streptococci and staphylococci an experimental study W LOEHR Arch f klin Chir 19 cxlii 31
- Epidemiological aspects of the recent poliomyelitis outbreak in Fort Worth Texas J H CROUCH Texas State J M 1927 xxxii 414
- The clinical aspects of the recent outbreak of antiripoliomyelitis in Fort Worth Texas C O TERRELL Texas State J M 1927 xxxii 416
- Experiences with local vaccine treatment J BAUMANN Zentralbl f Chir 192 li 1866

MARCH 1928

International Abstract of Surgery

Supplementary to
Surgery, Gynecology and Obstetrics

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CONTENTS

I	Index of Abstracts of Current Literature	iii
II	Authors	ix
III	Editor's Comment	x
IV	Abstracts of Current Literature	173-232
V	Bibliography of Current Literature	233-258

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CONTENTS—MARCH, 1928

ABSTRACTS OF CURRENT LITERATURE

SURGERY OF THE HEAD AND NECK	
Eye	
RADOS A The Nutrition of the Eye	173
CONSTANS G M Ocular Pemphigus	173
ADLER F H Ocular Disorders in Deficiency Diseases	173
DERBY G S and CARVILL M Anterior Ocular Tuberculosis	173
HOPKINS J G The Treatment of the Commoner Syphilitic Lesions of the Eye	173
HOWARD H J Trachomatosis of the Eye and Its Aftermath in Man	174
WRIGHT R E Two Cases of Granuloma Involving the Orbit Due to Actinomyces	174
WUNDERMAN H V The Relation of Cupping of the Optic Disk to Visual Fields in Glaucoma	174
REESF A B Intropium Uvea	174
BUTLER T H Three Cases of Embolism of a Retinal Artery	175
SOMBERG J S Optic Nerve Pallor Without Functional Disturbances in Leucitis	175
Ear	
IRASER J S and NELSON S H Deaf Muteism Due to a Bilateral Lesion of the Auditory Sensory Nerve	175
STEWART J I Herpes Zoster Oticus	75
SYMMONS C P Cranial Nerve Palsies in Otitis Media the Syndrome of the Posterior Fossa	175
DE KLEIN A and VERSTEEGH C Some Remarks upon the Present Position of the Physiology of the Labyrinth	175
PORTMANN G The Sacculus Endolymphaticus and an Operation for Drainage for the Relief of Vertigo	76
Nose and Sinuses	
FINCK H P Tissue Changes in the Nasal Mucosa Preliminary Report	176
Mouth	
DOUBLEDAY I N On Chronic Fusospirillary Infection of the Periodontal Membrane and Its Treatment	76
JOBSON G B The Surgical Correction of Cleft Lip and Cleft Palate	176
HANSKE J A The Importance of Pediatric Care in the Operative Treatment of Harelip and Cleft Palate	176
LIVING J Some Phases of Intra Oral Tumors with Special Reference to Treatment by Radiation	177
BURNHAM C F Radium in Intra Oral Cancer	177
DUFFY J J The Cervical Lymph Nodes in Intra Oral Carcinoma	177
Neck	
MARTIN K A The Conditions under Which Iodine Will Cause a Change in the Basal Metabolic Rate in Man I Its Occurrence in Conditions Other Than That of Graves Disease	177
TIBBUTT A H and WOODHILL V R Aberrant Thyroid Tissue	178
BLUNARD R The Surgical Treatment of Cancer of the Cervical Glands	27
SURGERY OF THE NERVOUS SYSTEM	
Brain and Its Coverings Cranial Nerves	
DEL RIO HORTIGA P and PINFIELD W Cerebral Cicatrix The Reaction of Neuroglia and Microglia to Brain Wounds	179
LEWIS D and LEFF C On the Glial Elements in the Posterior Lobe of the Human Hypophysis	179
GARCIN R The Syndrome of Unilateral Paralysis of All of the Cranial Nerves A Contribution on Tumors of the Base of the Skull	179
SCALONE I The Experimental Anatomocopathological Basis of the Surgical Treatment of Neuralgia of the Trifacial Nerve and the Changes in the Cerebral Ganglion in Retrograde and Neurotomy	180
TRAZIER C H Trigeminal Neuralgia Fourteen Years Experience with Fractional Section of the Sensory Root as the Major Operation	180
Sympathetic Nerves	
LOUBACHEFF S The Results of Periauricular Sympathectomy According to an Inquiry Made Among Surgeons of Russia in 1926	181
Miscellaneous	
SYMMONS C P Cranial Nerve Lesions in Otitis Media the Syndrome of the Posterior Fossa	175
IEPOUTRE C Permanent Nerve Disturbances Resulting from Spinal Anesthesia	29
SURGERY OF THE CHEST	
Chest Wall and Breast	
LAUTRIER L M LÉVY C and DUBOIS A Papillary Disease of the Nipple Is Not a Simple Intraepithelial Dyskeratosis But a True Epidermotrophic Carcinoma Requiring Early and Complete Removal of the Breast	182

OBSTETRICS

Pregnancy and Its Complications

- REISMAN, P. The Theory of an Interus of Pregnancy and Operative Investigation 03
- SCHUMANN, F. A. Observations upon the Coexistence of Carcinoma of the Fundus Uteri and Pregnancy 03
- IKEDA, I. The Etiology and Pathology of the Leucocytic Infiltration of the Human Placenta 203
- DAVIDSON, H. S. The Apeutic Abortion with Special Reference to Method of Induction 04
- McQUEEN, J. D. Hemorrhage in Pregnancy 204
- CRUCKSHANK, J. N. Acute Endocarditis in Pregnancy and the Puerperium. Notes on Eleven Autopsies 04
- NIELSEN, F. S. The Treatment of Cardiac Complications of Pregnancy and Labor 204
- CROSSLAND, B. C. and DANFORTH, W. C. Pyelitis in Pregnancy 05
- PUGH, W. S. Pyelitis of Pregnancy. Its Treatment with the Indwelling Catheter 20
- CRAIB, E. G. Stricture Formation in the Uterus Following Iyelonephritis of Pregnancy 20

Labor and Its Complications

- CORDON, C. A. Respiratory Emphysema in Labor 05
- MAYER, G. C. Cesarean Section. Indication and Limitations 05
- RUCKER, M. P. The Treatment of Contraction Ring Dystocia with Adrenalin 206
- SCHUMACHER, P. The Mechanism of Labor in the Contracted Pelvis. IV. The Transversely Contracted Pelvis 206
- FREED, F. C. Clinical Signs of Fetal Distress During Labor 206

Puerperium and Its Complications

- FINDLEY, I. Puerperal Inversion of the Uterus 207

Miscellaneous

- KOSMAI, G. W. Fundamental Training for Obstetric Nurses 07
- YAMAMOTO, T. The Effect of the X-ray on the Development of the Embryo of the Hen 08

GENITO URINARY SURGERY

Adrenal Kidney and Ureter

- BROTHMAN, S. A. The Etiology and Clinical Aspects of Perinephric Abscesses 29
- CORRUB, B. C. and DANFORTH, W. C. Pyelitis in Pregnancy 13
- PUGH, W. S. Pyelitis of Pregnancy. Its Treatment with the Indwelling Catheter 221
- CRAIB, E. G. Stricture Formation in the Ureter Following Iyelonephritis of Pregnancy 13
- MULLER, W. A Simple Improved Method of Extracting Deep Calculi from the Ureter 213
- HUNTER, G. I. Ureteral Stricture and Chronic Pyelitis in Children 213

Genital Organs

- WILDBOLT, H. Tests of Renal Function in Prostatitis 214
- THOMAS, B. A. and IBBERT, J. T. Prostatic Calculi 15
- THOMAS, B. A. Vital Factors in the Management of Prostatic Obstruction 15
- Miscellaneous 16
- KAPLSCHNER, H. I. Urological Problems in Infancy and Childhood 16

SURGERY OF THE BONES JOINTS MUSCLES TENDONS

Conditions of the Bones Joints Muscles Tendons Etc

- BERNSTEIN, M. A. and WELLS, P. A. Epiphyseolysis 217
- POGOREL, M. H. The Formation of Pice Bodies in Tuberculosis 217
- BRESCHOT, and FISCHER. Two Cases of Periosteal Sarcoma. One Patient Who Was Treated by Roentgenotherapy Has Remained Cured for a Year and Eight Months. The Other Who Was Operated upon Died Five Months Later 217
- DITTRICH, K. von. The Regeneration of Tendons 8
- FICHHOFF, E. The Pathogenesis of Tendonitis Stenosis 218
- MASON, M. I. and WOOLSTON, W. H. Isolated Giant Cell Xanthomatous Tumors of the Fingers and Hand 8
- HELDYON, P. F. Three Cases of Tabetic Charcot's Spine 29
- BOOTHSTEIN, S. W. Osteochondritis of the Spine with a Report of Two Cases 20
- FAGGE, C. H. On Injury of the Semilunar Cartilages 20
- CLUBBINS, W. P. and CONLEY, A. H. Injuries to the Menisci and the Ligamentum Mucosum Commonly Called Internal Derangements of the Knee Joint 20

Surgery of the Bones Joints Muscles Tendons Etc

- KIDNER, F. C. and MURDO, F. Comparative Results of Operative and Non-operative Methods of Treatment of Tuberculosis of the Spine in Children 20

Fractures and Dislocations

- ISKELUND, V. Fracture of the Lower End of the Radius (Collis Fracture) and Its Treatment 21
- JACKSON, R. H. Simple Uncomplicated Rotary Dislocation of the Atlas 1
- JEFFERSON, G. On Fractures of the First Cervical Vertebra 221
- FALLEN, R. Roentgenograms of Fracture of the Femur 13
- McMURCHEN, I. G. A New Device for the Reduction of Fractures. Uses, Advantages and Results 213
- INDEFRO, K. R. The Strength of Certain Materials Used for Prostheses 24

BIBLIOGRAPHY

Surgery of the Head and Neck

Head	233
Eye	33
Ear	234
Nose and Sinuses	234
Mouth	235
Pharynx	35
Neck	235

Surgery of the Nervous System

Brain and Its Coverings Cranial Nerves	36
Peripheral Nerves	37
Sympathetic Nerves	237
Miscellaneous	237

Surgery of the Chest

Chest Wall and Breast	37
Trachea Lungs and Pleura	37
Heart and Pericardium	38
Esophagus and Mediastinum	238
Miscellaneous	238

Surgery of the Abdomen

Abdominal Wall and Peritoneum	239
Gastrointestinal Tract	239
Liver Gall Bladder Pancreas and Spleen	241
Miscellaneous	242

Gynecology

Uterus	243
Adnexal and Periuterine Conditions	43
External Genitalia	244
Miscellaneous	44

Obstetrics

Pregnancy and Its Complications	245
Labor and Its Complications	47
Puerperium and Its Complications	248
Newborn	249
Miscellaneous	249

Genito Urinary Surgery

Adrenal Kidney and Ureter	49
Bladder Urethra and Penis	50
Genital Organs	250
Miscellaneous	251

Surgery of the Bones Joints Muscles Tendons

Conditions of the Bones Joints Muscles Tendons	
Etc	51
Surgery of the Bones Joints Muscle Tendons Etc	53
Fractures and Dislocation	53
Orthopedic in General	53

Surgery of the Blood and Lymph Systems

Blood Vessels	54
Blood Transfusion	54
Lymph Vessel and Glands	54

Surgical Technique

Operative Surgery and Technique Postoperative Treatment	255
Antiseptic Surgery Treatment of Wounds and Infections	55
Anesthesia	255

Physicochemical Methods in Surgery

Röntgenology	256
Radium	256
Miscellaneous	256

Miscellaneous

Clinical Entities—General Physiological Conditions	257
General Bacterial Mycotic and Protozoan Infections	57
Ductless Gland	58
Surgical Pathology and Diagnosis	258
Hospital Medical Education and History	258

AUTHORS

OF THE ARTICLES ABSTRACTED IN THIS NUMBER

- Adler F H 173
 Arens I A 7
 Berglaussen O 3
 Be na d R
 Bernhe m B M 2 5
 Bernstein M A 7
 Bohmansson C 188
 Boorstein S W 0
 B es ot 217
 Brof ldt S A 09
 B ou he J C 88
 B un n H 80
 Burnam C F 1 7
 Butle T H 75
 C mpb ll M F 31
 Carn tt J B 19 5
 Carri gton G L 85
 Ca ill M 73
 C yla A 02
 Col v W B 31
 Conl y A H
 Con tan G M 1
 Corl s B C 3
 Crai tre F C 213
 Cru ksh nk J N
 Cul bins W I 0
 Cu ti A H
 Dal l i sen F 24
 Da fo th W C 3
 David on H S 04
 De Kl ij A
 Del Pio Ho te a I 1 9
 D rly C S 3
 D A 8
 D tt l l K 0 8
 Do ll day F N 1
 Duffy I J 7
 Echl ff E 13
 Eskelund V 21
 F wing J 1 7
 Fagg C H 2 0
 Faltin I 2
 Feier W A 28
 Feldman M 184
 Finck H P 176
 Findley P 207
 Fischer 7
 Ira er J S 172
 I razier C H 80
 Freed F C 206
 Friedenwald J 84
 Callagher W J 19
 Ca cin P 1 9
 Gordon C A 02 5
 Cr enbaum S S 5
 Haden I I 23
 Henske J A 176
 Her d n P F 19
 Hoffmann V 93
 Hopk i s J G 1 3
 Ho sley J S 187
 Howard H J 1 4
 Huet J A 94
 Hunner G L 13
 Ikeda K 03
 Illi g o th C F W 192
 Inbe g K I 4
 I elin H 8
 J kson P H 1
 J fterson G 221
 Jobson G B 176
 Kidne F C 0
 Koenig R 200
 I ohl r A 8
 Koontz A I 8
 ko mak G W 07
 I retschmer H I 6
 Laroche G 194
 I e I C 179
 Leonard V 8
 I epout e C 229
 L C y G 8
 I ewis D 1,9
 Lewi ohn R 187
 I nych F W 28
 Macl e na A 189
 Macrae D J 195
 Mandell aum M J 83
 Martin K A 17
 Ma on M L 2 9
 McCutchen I G 2
 McQueen J D 04
 McIl ill S 185
 Miller C J 197
 Moller W 2 3
 Mosher G C 05
 Mülle G P 195
 Muro F 2 0
 Muzen ek P 89
 Nel on S H 5
 Neu bauer F 2 6
 New ll I S 05
 Ok nczyk 190
 Paut ie I M 18
 P nñ ld W 1 9
 I eter G 30
 Pete son R 2 0
 Pfahler C F 230
 Polacco F 194
 Polak J O 199
 Portmann G 6
 Pugh W S 13
 Pado A 73
 Peese A B 1,4
 Rissmann P 203
 Polbert J T 5
 I ogers M H 217
 Poubacheff S 81
 I ucker M P 06
 I ud E 198
 Sachs L 5
 Sampson J A 01
 Scalone I 180
 Sel ill I el A 183
 Schmutz H 198
 Schumacher I 06
 Schumann E A 203
 St ldon R F 96
 Smyth D C 183
 Somborg J S 5
 Sturlin er F 86
 Steinberg M I 188
 Ste nha dt B 01
 Stewa t J F 1,
 Symo l C P 175
 Tana esc 90
 Tel butt A H 78
 Tloma B A 12
 Tro ll A 92
 Ve ste gh C 1 5
 Vidgoff I J 88
 Wa th n H J Jr 5
 Wicker M 196
 Widmann B I 30
 Wilß olz H 14
 Woodl ll V R 8
 Wool ton W H 218
 W ht I E 1 4
 Wuerd mann H A 1 4
 Yamamoto T 08
 Zinn W F 84

EDITOR'S COMMENT

THE persistence of virulent streptococci in the body tissues for long periods perhaps after symptom of infection have subsided is emphasized by Curtis' admonition to defer operation after streptococic infection of the tubes for at least two years (p. 20) and by Illingworth's bacteriologic study of the bile and gall bladder wall in 100 surgically removed gall bladders (p. 11). In 100 pairs of tubes involved in gonorrheal inflammation Curtis was unable to find the organism twelve weeks after the acute symptoms had subsided. No comparable study could be made with safety in the presence of streptococic infection, but Illingworth's findings of infection of the gall bladder wall in 6 of 100 cases of streptococci alone in 34 cases and of streptococci and coliform bacilli in 5 cases is definite evidence of the frequently noted clinical fact that streptococci once implanted in the body tissues remain for long periods of time as potential sources of acute reinfection.

Kilner and Muro's interesting study of the comparative results of operative and non-operative methods of treatment of tuberculosis of the spine (p. 30) emphasizes the fact that restoration of the affected bone must be attained before the patient is allowed to get up and that clinical evidence of cure is not adequate proof of such restoration. As to the value of different methods of treatment the authors conclude that cure depends principally upon a prolonged rest without weight bearing and that patients in whom fusion operation has been long required practically a long and careful after-treatment as patient unoperated upon. The main conclusion of the authors will be aided with interest since the present report indicates the constantly increasing tendency to treat bone and joint tuberculosis by prolonged immobilization and heliotherapy and to reduce operative procedures to the minimum.

Frazier's report of fourteen years' experience with fractional anesthesia of the sensory root of the trigeminal nerve (p. 150) emphasizes the advances

that have been made in a relatively short period of time in the surgical treatment of trigeminal neuralgia. It also recalls the fact that the substitution of a comparatively simple and certain procedure—section of the sensory root—for the dangerous and difficult operations such as extirpation of the ganglion and avulsion of its branches that were formerly in vogue and that the subsequent refinements of the operation—preservation of the motor root and of the uninvolved sensory fibers in patients with involvement of one or two divisions of the nerve—have resulted almost entirely from the work of Spiller and Frazier. Lately is it the fortune of one surgeon to contribute so largely and effectively to surgical therapeutics?

Miller's comprehensive discussion of the treatment of uterine fibroid (p. 197) emphasizes particularly the specific indications and contraindications for radium treatment, myomectomy, supracervical complete and vaginal hysterectomy. He states that his experience with X-ray treatment is limited because of the satisfactory results obtained with radium. Abstinence from treatment for small symptomatic tumors, careful preoperative preparation of the patient, gentle handling of tissue and limitation of the number of clamps used at operation to diminish the likelihood of postoperative thrombophlebitis are some of the points upon which Miller lays special stress.

Koontz's interesting report on the successful use of preserved grafts of the fascia lata of the ox (p. 228), the discussion of Lewyohn and Horsley on the surgical treatment of gastroduodenal ulceration (p. 187), Herndon's account of three cases of Chirco's pineal associated with (p. 210), Pautrier's and Diss' studies of the pathogenesis and cellular pathology of the disease of the nipple (p. 18) and clinical review of the technique and result of postoperative roentgen radiation in patients with cancer of the breast (p. 182) are a few others of the many interesting contributions reviewed in this month's issue of the ABSTRACT.

INTERNATIONAL ABSTRACT OF SURGERY

MARCH 1928

ABSTRACTS OF CURRENT LITERATURE SURGERY OF THE HEAD AND NECK

EYE

Rados A. The Nutrition of the Eye *Arch Ophth*
97 1: 567

This article deals with the aqueous and vitreous as factor in the nutrition of the eye to which the myopia of uveitis the hyperopia of diabetes and the question of glaucoma are related. Leber's theory that the aqueous is produced by the ciliary body was refuted by the work of Hamburger which indicated that the aqueous is produced by the cellular activity of the iris and that there is no current of secretion through the pupil. In their production composition and biological qualities the aqueous vitreous and spinal fluid are closely related.

In animals the albumin content of the aqueous is very slight except immediately after paracentesis. Under normal conditions the aqueous is ionizable but following paracentesis or in inflammatory reactions of the anterior segment it is in colloidal solution. The ionizable solution is due to dialyzation the colloidal to filtration. The aqueous is the nutritive agent of the cornea and lens but the vitreous is concerned with the nourishment of the lens especially the posterior pole the normal course of the metabolism of the lens being regulated by the capsule.

VIRGIL WESCOTT M.D.

Conans G. M. Ocular Pemphigus *Am J Ophth*
97 3: 810

Ocular pemphigus is very rare. Its symptoms are general itching the formation of bleb itching and burning of the eye and redness of the conjunctiva. As a rule the condition is bilateral. In its later stages it may be complicated by symblepharon entropion corneal ulcer hypopyon or perforation.

The author reports three cases. The first was a case of general pemphigus with severe ocular manifestations the second a case of primary pemphigus of the skin with secondary involvement of the eyes and the third a case of primary pemphigus of the eyes.

GEORGE R. McALLIFF M.D.

Adler F. H. Ocular Disorders in Deficiency Diseases *Arch Ophth*
1927 1: 593

This article is a review of the findings of an experimental and clinical study of deficiency diseases as they affect the structure and function of the eye. Adler discusses xerophthalmia at length and cataracts and night blindness more briefly. The bibliography contains four references on deficiency disease in general and thirty eight on the ocular aspects of deficiency disease.

VIRGIL WESCOTT M.D.

Derby G. S. and Carvill M. Anterior Ocular Tuberculosis *Arch Ophth*
1927 1: 53

The authors report a study of sixty three cases of anterior ocular tuberculosis. They believe that phlyctenular disease nodular scleritis sclerokeratitis and sclerosing keratitis are related to tuberculosis. In 53 per cent of the cases the initial inflammation of the eye was a phlyctenular keratitis. The diagnosis was based on the ocular findings a focal reaction to tuberculin (which however often fails) the signs of tuberculosis elsewhere in the body the elimination of other causes biopsy of the lesion and the findings of guinea pig inoculations.

In all but seven of the cases a recurrence developed but the periods of quiescence ranged from three to eighteen years. The mortality was high being 17 per cent. Tuberculin was used freely both the bouillon filtrate and old tuberculin. In two cases it seemed to do great harm the patients lost the sight of both eyes. In the author's opinion the best that can be said fairly of tuberculin therapy at the present time is that in certain instances it may help to cut short the attack. It does not prevent recurrence and occasionally may do serious harm.

VIRGIL WESCOTT M.D.

Hopkins J. G. The Treatment of the Commoner Syphilitic Lesions of the Eye *Arch Ophth*
1927 1: 543

The arsphenamines are the most active spirochæticides and clinically the most effective. Bis

lary margin. Sometimes it is seen after cataract extraction when there is synchia formation between the pupillary border and the empty lens capsule.

In Group there were nine cases in which the entropion resulted from the contracture of a membrane extending from the anterior surface of the lens capsule to the anterior surface of the iris. In four the primary condition was luetic iridocyclitis.

Group 3 was made up of one case in which the condition was produced by the contracture of a membrane on the posterior surface of the iris following cataract extraction with severe hemorrhage in the anterior and posterior chambers.

In Group 4 there were five cases in which the entropion was associated with iris bomb.

GEORGE R. McVULF M.D.

Butler T. H. Three Cases of Embolism of a Retinal Artery. *Brit J Ophth* 1917 11 559.

Three cases of embolism of a retinal artery are reported. In the first the condition was peripheral and there was a corresponding sector field defect. Under treatment by paracentesis massage and the use of amylnitrite the condition cleared up entirely. In the second and third cases the emboli were situated more centrally and caused loss of vision with the exception of light perception. The cause of the condition in the first case is not stated. In the second and third cases it was endocarditis and thrombosis of a varicose vein respectively.

SAMUEL A. DARR M.D.

Somberg J. S. Optic Nerve Pallor without Functional Disturbances in Luetics. *J Ophth* 1913 35 83.

Discoloration of the optic nerves without changes in visual acuity or the fields of vision has been noted frequently. The purpose of the study here reported was to ascertain any changes in these nerves in patients undergoing trypanblue treatment. In a study of the fundi of 1000 persons with cerebrospinal syphilis Somberg noted a washed out appearance of the disk in eighty six (4.3 per cent) and other ocular changes due to syphilis in 75 per cent. In about 50 per cent of the cases of disk pallor the condition was bilateral. In about 85 per cent of this group vision was normal in the others it was subnormal but no lower than 20/40 and occasionally a slight peripheral contraction was apparent. At the end of a two year period of observation almost 60 per cent of the cases of this group showed a primary optic atrophy without any marked functional disturbance. In 6 per cent optic atrophy with reduction of vision and field changes supervened and in the remainder the atrophy was incomplete.

The most probable cause of disk pallor without functional change is involvement of the small vessels of the central connective tissue strand of the optic nerve. The author believes that degeneration of the ganglion cell may be the prime factor in the production of primary atrophy.

GEORGE R. McVULF M.D.

EAR

Fraser J. S. and Nelson S. H. Deaf Mutism Due to a Bilateral Lesion of the Auditory Sensory Areas. *Brit M J* 1917 11 82.

In the vast majority of cases of deaf mutism the lesion is situated in the ear itself. Fraser and Nelson report in detail a case of deaf mutism in a child three years of age in which the lesion was found on histological examination to be in the auditory paths and centers.

JAMES C. BRASWELL M.D.

Stewart J. P. Herpes Zoster Oticus. *J Laryngol & Otol* 1927 41 66.

The author reports a case of zoster with a multiplicity of lesions involving primarily the vestibular ganglion on either side. It was assumed that on the left side the infection traveled up the large lymph spaces in the substance of the cochlear filament connecting the vestibular ganglion with the geniculate ganglion and probably extended downward along the chorda tympani involving the lingual nerve. It is possible also that there was a primary infection of the geniculate ganglion.

The symptoms were blisters on the left border of the tongue, a slight loss of taste, fever, left sided deafness, left sided facial paralysis and bilateral vestibular paralysis. All except the left sided deafness cleared up.

MANFORD P. WALTZ M.D.

Symonds C. P. Cranial Nerve Palsies in Otitis Media: the Syndrome of the Posterior Fossa. *J Laryngol & Otol* 1919 31 66.

The author reports four cases in which paralysis of the lower three or four cranial nerves resulted from otitis media. Involvement of these nerves may be combined with paralysis of the sixth and seventh.

Gradenigo's syndrome is assumed to be due to an extradural non suppurative inflammation. The lower cranial nerves may be affected in a similar manner by inflammatory thickening of the dura mater surrounding their points of exit from the cranial cavity. Symonds cites a case in which such involvement was proved at autopsy. The prognosis seems to be good.

MANFORD P. WALTZ M.D.

De Kleijn A. and Versteegh C. Some Remarks upon the Present Position of the Physiology of the Labyrinth. *J Laryngol & Otol* 1927 41 649.

The author's findings in studies made on rabbits are in absolute contradiction to current views on the physiology of the labyrinth.

After extirpation of the entire saccular macula on one side the rabbits showed no spontaneous vestibular disturbances and all labyrinthine righting reflexes could be evoked normally. Therefore in rabbits the saccular maculae are not responsible for the known vestibular labyrinthine reflexes.

When complete extirpation of the labyrinth was done on one side and partial extirpation on the

other only to semicircular canals being left to function post rotation nystagmus in all directions horizontal vertical and rotatory could be evoked

In clinical case of cerebellar lesions it was found that the strongest post-rotational nystagmus is that in which the quick component at the side of the extirpation or lesion. Incas of cerebellar lesions this sign is absent. M A N O D I W A L T M D

Po mann G The Siccus Endolymphaticus and Its Role in the Pathogenesis of the Reticular System. J A S M D L d 9 86

The author reports on some left laryngeal operation for each girth of the larynx. The technique employed is simple. The procedure is made through the mouth and without any connection with the middle ear. The author has been able to cure the otitis media with vertigo by this operation. J I C B I L M D

NOSE AND SINUSES

Fack H P Tissue Changes in the Nasal Mucosa. P I m n a r y R e p t L v s p 9 83

In acute nasal congestion microscopic examination of the nasal mucosa reveals edema and increase in the mucous cells and a decrease in the eosinophils but none of the classical signs of bacterial infection. In acute purulent rhinitis the lymphocytes are more numerous in the nasal mucosa and the eosinophils are fewer. In chronic purulent rhinitis shows the lymphocytes and an increase of lymphoid elements and plasma cells. In the purulent condition it is usually difficult to demonstrate bacteria in the tissue.

Vasomotor rhinitis is characterized by alternating marked changes in the eosinophils. In nasal polyps various cell types are found and depend upon the character of the constant nasal infection. Cystic polyps differ mainly in the mucous epithelium and cyst degeneration of polyps. The tissue adjacent to such formations has lymphocytes plasma cells and connective tissue changes. In atrophic conditions of the nasal mucosa there is definite reduction of all appearance of lymphoid elements eosinophils and other filtrate cells.

In the majority of cases changes in the sign of the cell in the lymphocyte plasma cell and eosinophils. Lymphocytes and plasma cells are present in purulent rhinitis and eosinophils in somotor and anaphylactic conditions.

G E R M A N L I M D

MOUTH

Doubleday F N On the Use of Fused Plastic in the Treatment of the Oral Mucous Membrane and Its Tissue. J R S M D L d 9 7 39

The author discusses the characteristics of the destructive of the membrane and bone in the form

tion occurs only when pyogenic organisms are present. The organisms are found constantly—the streptococcus dentium and the bacillus fusiformis. Doubleday reports three cases.

The local treatment consists in scaling followed by the instillation into the gum pockets of a drop of 10 per cent chromic acid and liquor hydrogyni peroxid. This instillation is repeated two or three times weekly for about a month. It causes the formation of chromium sesquioxide and in the presence of much free oxygen facultative bacteria cannot live. Another beneficial effect of the acid is its inhibition of mucus secretion. Measures should be taken also to improve the general health.

G O R G E I M C L U I F F M D

Jobson G B The Surgical Correction of Cleft Lip and Cleft Palate. J O I J G I 19 7 434

The author deals with the complete deformity of the lip and palate. He prefers to repair the lip first. The he does after the third week and not later than the fourth month. Early operation is advisable as the permanent lip is more becoming and increases in difficulty to mould. After the premaxilla has been gradually forced into place by the constant lip action there is improvement in the nasal breathing and the appearance of the face. Before the operation a roentgenogram of the thymus should be taken and a vertical incision should be given.

In the author's case the lip, cheek and nostril are repaired with the underlying bone and later approximated with sutures which are free from tension. When necessary a trapezoidal piece of the premaxilla is resected to facilitate closure. For cleft palate the mucoperiosteal operation is done. The incision is made on an anteroposterior direction in the palate on each side just inside the alveolar ridge and the necessary fracture is produced by pressure. Both sides of the palate fissure are then brought together and sutured with silk. The Ivoktan gut is used for coaptation sutures. The gauze packs in the incisions are removed after five days. Nasal catheters are passed to prevent blockage by the packs and are removed with the packs.

The second part of the correction may be done by any of the recognized methods of mucoperiosteal flap operation but the author prefers the von Langenbeck procedure with suitable modification.

G E O R G E I M C L U I F F M D

Hinske J A The Importance of Pedicle Cleft Lip and Cleft Palate. J I M I 9 7 1 1666

The author discusses the various factors of importance in the preoperative and postoperative treatment of cleft lip and cleft palate. He emphasizes that formerly good results are to be obtained these cases should be under the care of a pediatrician.

The most important problem is the feeding. The patient should be treated in a hospital here a special technique for feeding can be used. Babies

harelip or a cleft of the hard palate may be fed with a rubber ear syringe. Occasionally gavage is necessary.

Roentgenograms of the chest should be made in every case chiefly to determine the size of the thymus. Reduction in the size of the thymus can be obtained by roentgenotherapy.

In a series of 103 cases controlled by the pediatrician there was only one death.

W. M. PATON, M.D.

Ewing, J. Some Phases of Intra Oral Tumors with Special Reference to Treatment by Radiation. *Id.* 1917, 19, 7, 15, 359.

Burnam, C. F. Radium in Intra Oral Cancer. *Id.* 1917, 19, 7, 366.

Duffy, J. J. The Cervical Lymph Nodes in Intra Oral Carcinoma. *Id.* 1917, 19, 7, 373.

EWING discusses intra oral tumors from the stand point of structure, growth and metastasizing tendencies with special reference to their susceptibility to irradiation. He deals at some length with cancers of the lip and tongue, epitheliomata of the alveolar ridge and tonsil, lymphosarcoma of the tonsil and pharynx, tumors of the nasal mucosa, neuro epitheliomata of the superior maxilla, carcinoma of the maxillary antrum and fibrosarcoma of the perosteum of the superior maxilla. Mention is made of individual peculiarities of the various tumors which in large measure determine the treatment to be applied. Pathological data bearing on the control of the lymph nodes in malignant tumors in and about the mouth are also considered. Observations tend to show that the common mode of extension is by embolism; therefore the extreme surgical procedure of removing the primary tumor and the nodes *en bloc* is not indicated in all cases. Because of the results attainable by radiation the practice of leaving the nodes until they show clinical signs of involvement seems to be justified. As ulceration and infection accelerate the progress of the neoplasm and multiply the complications care must be taken to prevent them as far as possible and control them when they have already developed.

BURNAM considers only epitheliomata of the mouth. He discusses their pathology briefly and advocates biopsy for diagnosis. He classifies them according to their site of origin and calls attention to their great variation in malignancy. The application of radiation to epitheliomata in general is discussed. From his own observations the author concludes that epitheliomata of the oral cavity do not require any heavier dosage to obtain lethal effects than those of the skin, the lip or the uterine cervix.

Surface applications are used to advantage in superficial lesions. In the author's cases the treatments are given in a single sitting whenever possible. When implantation is chosen, gold covered emanation points are buried in the tissue and withdrawn after the desired dosage has been obtained. The filtered tube does not produce the necrosis or the pain caused by the bare tube technique. It is possible by

this means effectually to eliminate epitheliomata of considerable size almost without pain and without deformity. In cases of deep lesions surface applications are often of supplementary value to the implantations.

As regards the field of applicability of radium Burnam is of the opinion that any lesion in the mouth which can be cured by surgical extirpation or electrocoagulation can be equally well cured by radium.

DUFFY states that the chief essential in the therapy of intra oral carcinoma is treatment of the cervical lymph glands not only in cases with metastases but also in the earlier stages when no cervical nodes are palpable. Prior to the use of irradiation the treatment of choice was surgical removal of the adjacent lymph glands with the primary lesion. Since then conservative treatment by irradiation has been favored and the results in cases irradiated in the period from 1917 to 1924 indicate that this treatment is a rational one.

ADOLPH HARTUNG, M.D.

NECK

Martin, K. A. The Conditions under Which Iodine Will Cause a Change in the Basal Metabolic Rate in Man. I. Its Occurrence in Conditions Other Than That of Graves Disease. *Am. J. M.* 1917, 19, 648.

The beneficial effect of iodine in Graves disease is well recognized. The course of this disease under iodine therapy has been fairly well studied but the mechanism of the temporary fall in the basal metabolic rate and the clinical improvement is not clear. Plummer has supported the theory that in Graves disease the thyroid gland produces an active agent abnormal in quality and quantity which is responsible for all of the manifestations of the disease and is either neutralized or inactivated by iodine. The only other theory is that advanced by Marine who believes that iodine causes within the thyroid a rapid accumulation of colloid which brings about a pressure retention sufficient to block the excessive secretion of the gland.

Marine's theory suggested to the author that it might be of value to study the effect of large doses of iodine on the basal metabolic rate in clinical conditions other than Graves disease. For such a study he selected cases from the New Haven (Connecticut) Hospital and Dispensary and divided them into the following five groups:

1. Cases in which there was an increase in the basal metabolic rate not due primarily to thyroid disease—cases of leukemia, polycythemia and primary anemia.

Cases of postinfection diseases.

3. Cases in which the basal metabolic rate was normal but the iodine content of the thyroid appeared to be below the physiological limit.

4. Cases in which the basal metabolic rate was below normal—cases of hypothyroidism and myxedema.

5. A group of normal controls

The basal metabolic rate was determined by the Roth Benedict closed circuit method. As soon as satisfactory readings were obtained the patients were given 5 drops of Lugol solution by mouth three times a day. The basal metabolic rate was then checked at intervals of seven and fourteen days. It was found that any changes could be detected with practically the same degree of certainty when the determination were at these intervals as when they were made more frequently.

The twenty-nine subjects studied included four normal controls, two patients with small cell myopathic anemia, four with primary anemia, two with polycythemia, two with acute rheumatic fever in the afebrile stage, seven with simple goiter and symptoms of iodine deficiency, three with hypothyroidism including myxedema. All of whom had received their thyroid iodine therapy previously with hypothyroidism and myxedema had had or received thyroid or iodine therapy.

The article includes graphs charts which show the varying influences of iodine therapy on the different groups.

The normal controls showed no appreciable change in the basal metabolic rate during the period of observation.

In the case of simple goiter with symptoms of iodine deficiency the basal metabolic rate rose gradually the first week with a slight rise in the second week.

In the case of hypothyroidism and myxedema the previous therapy there was an appreciable change.

In the case of hypothyroidism and myxedema without previous therapy the basal metabolic rate showed a marked increase in both the first and second weeks.

The cases of primary anemia showed a marked and constant fall from an increased basal metabolic rate during the period of observation.

The thyroid cases of the myxedema showed an increase in basal metabolic rate which fell rapidly under the therapy.

The latter this is reflected upon the fact that the basal metabolic rate can be made to rise also in conditions other than iodine deficiency by the administration of iodine. The change is not rapid and transient but slow and lasting.

The manner in which the intake of iodine influences the basal metabolic rate in the disease is still under discussion. Rehfisch and Marine have reported that after the administration of iodine in large doses a hyperplastic gland secretion

is converted into a colloid goiter the alveoli become distended with colloid and the lining epithelium is changed from a high columnar to a low cuboidal type. Such a histological picture suggests that the secretory portions are under pressure and hence the amount of thyroid secretion is markedly diminished.

Sturgis has shown that iodine has no effect on the toxic symptoms induced in rabbits by the intravenous injection of thyroxine. It has been shown also that if the chemical composition of thyroxine is changed it has no effect on the production in man. If the change in the symptom is due to neutralization of the toxic substance by the action of iodine the change will be temporary as long as the iodine is maintained as constant.

The most marked effect is produced when the iodine is given in comparison with large doses over a short period of time. If small doses are given over longer periods the effect is from a hyperplastic gland to a colloid state so gradual that the function of the thyroid is not disturbed. The extent to which iodine will affect the basal metabolic rate seems to have a very definite relationship to the ability of the gland to store and quickly regardless of the presence or absence of Graves disease.

M R D SON M D

Tebbutt A H and Woodhill V R Abstract
Thyroid Studies Medical Journal 1917 97 5 pp 12
p 358

The authors have the development of the thyroid from the histological point of view. The thyroid gland is composed of the thyroid follicles which are lined by a single layer of cuboidal cells. The cells are arranged in a regular pattern and the follicles are filled with colloid. The thyroid gland is a highly vascularized organ and the blood supply is derived from the thyroid artery and vein.

It is believed that the hyperplasia of the thyroid gland is a local process and is not a systemic one. The hyperplasia is characterized by an increase in the number of cells and an increase in the size of the cells. The hyperplasia is a result of an increase in the demand for thyroid hormone.

Access to the thyroid gland is through the thyroid artery and vein. The thyroid gland is a highly vascularized organ and the blood supply is derived from the thyroid artery and vein. The thyroid gland is a highly vascularized organ and the blood supply is derived from the thyroid artery and vein.

The conclusion drawn from the early embryonic life of the thyroid gland is that the thyroid gland is a highly vascularized organ and the blood supply is derived from the thyroid artery and vein. The thyroid gland is a highly vascularized organ and the blood supply is derived from the thyroid artery and vein.

J H M R W L V M D

SURGERY OF THE NERVOUS SYSTEM

BRAIN AND ITS COVERINGS CRANIAL NERVES

Del Rio Hortega P and Penfield W Cerebral Cicatrix The Reaction of Neuroglia and Microglia to Brain Wounds *Bull Johns Hopkins Hosp Bult* 19 7 vi 278

The authors investigated the healing of brain wounds in rabbits and dogs by microscopic study of sections prepared by the methods of Del Rio Hortega for microglia neuroglia astrocytes and connective tissue. The lesions were aseptic stab wounds in the rabbits and more extensive cerebral injuries in the dogs. The duration of the injury ranged from twelve hours to seventy three days in the rabbits and from twelve hours to six months in the dogs.

The first cellular change was observed in microglia cells which began their phagocytic activity early and continued it for a long period of time. Later the neuroglia astrocytes about the wound became swollen and those closest to the area of destruction or to obliterated vessels underwent clasmotodendrosis. Rapid amitotic division of the other astrocytes then occurred and the cells became fibrous and arranged themselves typically in a radial fashion about the wound. A connective tissue core formed at the center connective tissue collagen fibrils were laid down and the wound contracted. In stabs where no connective tissue core was present there was no tendency toward a radial arrangement of the astrocytes and no evidence of contraction.

Compound granular corpuscles were numerous in the wounds. Transitions from microglia to these cells could be seen but there was no evidence that the astrocytes became mobile or developed into these cells. When the products of degeneration had disappeared from the wound microglia in its complicated spider like form appeared in the scar.

The report of the authors findings is preceded by a brief review of the literature.

ERIC OLDBERG M D

Lewis D and Lee F C On the Glandular Elements in the Posterior Lobe of the Human Hypophysis *Bull Johns Hopkins Hosp Bult* 19 7 li 241

The authors have made a microscopic study of serial sections of thirty human hypophyses ranging in age from those of newborn infants to that of a subject seventy three years old.

They conclude that glandular tissue may be found in the posterior lobe at all ages but definite tubular acinous glands communicating with the hypophyseal cleft are not found after the fourth year. Tubular glands may occur in any portion of the

posterior lobe. Their cells contain a colloidal substance similar to that found in the space into which the gland empties.

Basophilic cells closely resembling those occurring in the anterior lobe may be found in any location in the posterior lobe. Their number increases with age.

The authors discuss briefly the relation of the glandular elements to each other and to the physiology of the posterior lobe and review the findings of other investigators in the field of posterior lobe histology. The article is supplemented by a number of drawings and photomicrographs.

ERIC OLDBERG M D

Garcin R The Syndrome of Unilateral Paralysis of All of the Cranial Nerves A Contribution on Tumors of the Base of the Skull (Le syndrome paralytique unilatéral global des nerfs crâniens contribution à l'étude de tumeurs de la base du crâne) *Presse Méd Par* 19 7 xxxv 1137

Multiple paralyzes of the cranial nerves on one side of the head group themselves clinically into a number of topographical syndromes which are dependent upon the lesions about the various cranial foramina. The author reviews the syndromes of the sphenoidal fissure the external wall of the cavernous sinus the petrosphenoidal fissure the apex of the petrous portion of the temporal bone the internal auditory meatus the posterior lacerate foramen the hypoglossal canal the retroptotid space and various dissociated forms of these posterior syndromes.

These syndromes do not exhaust the possible combinations of unilateral cranial nerve involvement but they are sufficient since together they cover all of the paralytic symptoms due to lesions of the bony floor of the skull. However as their cause is neoplastic they often overlap the extension of the tumor tending toward rapid fusion of the intermediate syndromes. This is true especially in cases of neoplasms arising within or developing in contact with the base of the skull.

From the etiological point of view the basilar neoplasms may be classified into two main groups the subcranial and the basilar tumors. Arising as a rule in the rhinopharynx the former extend toward the base of the skull which they perforate. Garcin reports seven cases in which such tumors gave rise to multiple unilateral paralyzes of the cranial nerves. The basilar tumors proper grow at the expense of some element of the base of the skull. Garcin reports ten tumors of the latter type which caused multiple unilateral paralyzes of the cranial nerves.

Whether the tumor is a subcranial or a basilar neoplasm the tendency toward the unilateral diffusion of these extensive multiple paralyzes of the cranial nerves is associated with absence of signs

SYMPATHETIC NERVES

thirds with conservation of the ophthalmic portion. The primary purpose of this modification was to prevent trophic keratitis.

The failure of this operation to be more generally adopted in spite of evidence that it prevents one of the most annoying complications of the major operation is attributed to assumed difficulty in its execution and the fear that it will be followed by recurrence. In answer to such objections Frazier describes the technique showing that it does not prolong the operation by more than a few minutes and states that since he first adopted the method in 1915 he has not found it necessary to reoperate in any case.

Frazier is becoming more and more convinced that if in the early stage of the disease the pain can be controlled in the branch or division first involved permanent and complete relief will be obtained. He calls attention to the fact that at the outset trigeminal neuralgia never involves more than one branch of a single division and that as time goes on the pain spreads to the other branches of the same division and finally to the other divisions. Later in the course of the disease when two divisions are involved it is almost invariably the case that in any given paroxysm the pain does not appear simultaneously in both but starts in the division in which it first developed and is then referred to the other division. Moreover it has often been observed that an alcohol injection into the division first involved is sufficient to control the pain in both divisions.

Therefore Frazier now sections only that portion of the ganglion which contains the fibers destined for the nerve which supplies the site of the original pain.

Because of the preservation of a portion of the sensory root the area of anesthesia after the operation is relatively small and possible areas of paræsthesia are reduced to the minimum.

GILBERT C. ANDERSON, M.D.

Roubacheff S. The Results of Periarterial Sympathectomy According to an Inquiry Made Among Russian Surgeons in 1926 (*Résultats de la sympathectomie periarterielle d'après une enquête faite en 1926 parmi les chirurgiens Russes*) *Revue de chirurgie* Par 19 7 xlv 341

Of the surgeons who replied to the authors' questionnaire regarding periarterial sympathectomy thirty-five had performed the operation. The total number of operations performed by them was 299. The conditions for which it was done were gangrene, ulcers of various origins, causalgia, perforating ulcer of the foot, Raynaud's disease, articular tuberculosis, chronic osteomyelitis, arthritis deformans, the congenital myotonia of Thomsen, contractures, and dysmenorrhœa.

In articular tuberculosis the results were negative. Of the thirteen cases of chronic osteomyelitis only one seemed to be benefited.

In arthritis deformans the congenital myotonia of Thomsen and contractures the results were negative.

Dysmenorrhœa was relieved immediately.

Of twenty-nine cases of causalgia sixteen were cured and twelve were definitely benefited.

Of the eleven cases of Raynaud's disease a definite cure for at least a year was obtained in five and improvement in three.

Perforating ulcers of the foot were cured in four of six cases.

Of fifty-one chronic ulcers of various origins all of which were located on the lower extremities, rapid cicatrization resulted in about one-half but complete and permanent healing occurred in only about a fourth.

Fifty-nine of 118 patients with gangrene were at least benefited immediately after the operation. In forty-two the result was negative.

ALBERT F. DEGROOT, M.D.

SURGERY OF THE CHEST

CHEST WALL AND BREAST

P utre L M Le v C nd D A P g t
D sea e of the N ppl I N t Simpl i e
c u Dyske But a T u Ep de mo
t pl C rc n m R qu ng La ly nd C n
pl te R n of the B t L i i i i t
d m mel t p mpl i i t t
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P t t l b l t t t l t p i t
d P 7 4

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f larg c l l (l a t d malpighan cell) h i ch
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d v d u a l m p h l o i a l a n l l i n c a l c h a g
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I a g e t s d a s e s a c o n d i t i o n w h i c h n v o r m y n
not terminate n carcinoma

H s t l i c a l l y I a g e t d s e s c h a a c t i z e d b y
the p r e s e n c e n a l l o f t h e l a y e r o f t h e e p i d e r m f
n u m r o u s l a g e a b n o r m a l c e l l s h c h t h e u t h r
c l l I a g e t c e l l T h e s e e l a g e p h i c a l c e l l s
d e v o d o f i n t e c e l l u l a r b i d e n t l c l e a r c y t p l s m
and l a g e s c u l a r o f t e n h y p e c l o m a t c u c l e i
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a n l m a y b e a t y p c a l n d m u l t i p l e T h c e l l a p p a
t o r e a c h t h e u p p e r l a y e r o f t h e s k n b y a c t i v e
i n v a s i o n f t h e e p i d e r m r a t h r t h n b y b n
c a r d u p a d b t h e s u r r o u n d i n g c e l l s T h s o
c a l l e d m a n t l c e l l s s o o f t e n d e s c e n d a r n r e a l t y
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P a t c e l l T h e l a r g e o u o o f t e n e m
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p r e s e n t N o t a n t i o n l a s e s r e d b e

t n t l e p t e r m l c e l l a n d P a e t c e l l s A s n o
l t l l c h n c a n b e d e t e c t e d b e t w e e n t h e
l l i n t h e c o n d i t i o n a n d t h o s e f o u n d
l n m a s f r n k l y p r e s e n t i t d o e s n o t a p p e a r
l t l t u n t h a t t h e c e l l s m a y a t o n e t i m e b e
t l t t l i t o b e i n t h e e a r l y s t a e s o f
t h l d i t b e c o m e m a l i g n a n t I n t h e
t h l I c t d e r s e s h u l d n o t b e i n
l l l t h e f l a t o s e s a d i s s u r e l y c a r
t i m t h l s n g

I h t l r u e e t h s s o n t h a t t h e c o n d i t i o n
m t h l a t i f r o u d u c t s I n a n e a l y
a b l d u l e f o u n d i n t h e b e a t
t h l t d e m o n s t r a t e g l n l u l a r e p t h e l
n t h l t t u d c t j u t b l o w t h e a p e o f t h e
p p l T h l l o f t h e c a r c m a v e r e i d e t i c a l
t l t h f u n l t h s k n a n d a c a r e f u l h s t o l o i
l t u t y t l r c a l s t a n g h o e d t h e m t o b e
g l a n d l c e l l T h a u t h o s c o n c l u d e t h a t t h e
c o n d i t i o n p m l c n o m a c f t h e d u c t s o r
t h r l f l a n l u l a r s t r u c t u r e n w h c h t h e c e l l s
a r e e p d n o t o f i t t h a t i s h a v m r a t e d t o a n d
t h u g h t h e s k n

I n p p t f t h r c c l u n t h e a u t h o r s c i t e a l o
t l e o c u r r e n t P a g e t d i e r n r e m o s o f t h
b o l y o t h e r t h a n t h b e a t A m e r i c a n e r e s o f s u c h
c a s e s e p o t e d i n t h e l t t r e s t h e f o u n d s e v e r a l
w h h w a n d o b t d l a e s o f P a g e t d i e r s e
v h h t h c t n u s c n d t o n v s a s o c i a t e d w t h
c a r m f m e d e e p r s t c t u e —P a e t s d i e a s e
o f t h e p r u m i t h c a c i n o m a t e o f t h e r e c t u m
P a e t s d e a o f t h e g l a n s p i t h c a r c i n o m a o f
t h u e t h a I a i j o r t h e s k i n o f t h e
a b d m n w i t h c a r c i n o m a o f t h e s e b a c e o u l n d s
a n d I t d i e a t o f t h e k i n o f t h e r m t h
c a c i n o m a n a l u s I n a l l f i t h e c a s e t h e
p o c e s a t t m e —a d e e p c a r c o m a o f l a n t u
l r s t c t u r e s w h c h i n f i l t r a t e d u p a r l i g t o t h s k n
M a L M

malignant lesion. Moreover in addition to this effect it has an unfavorable influence upon the blood and the rest of the body. In support of this conclusion Iselin cites experiments he carried out on rats. Although the rats were protected by thick lead tubing and only their extremities were irradiated a decided infiltration of the cornea was found later.

In Iselin's cases of breast cancer the postoperative irradiation is begun early as soon as the patient has recovered from the operation—usually during the first week. Iselin has never seen any harm from treatment begun early. At first he gives one Sabouraud unit at a sitting beginning with the irradiation of the supraclavicular and infraclavicular fossa and axilla from both the front and the back. The irradiation from the front is done with a filter of from 2 to 3 mm. of aluminum and a distance of 24 cm. and that from the back with a filter of from 3 to 5 mm. of aluminum and a distance of 50 cm. At the end of the first week the irradiation of the under element of the side and of the whole back is carried out. Three weeks later a second irradiation is given on the affected side with the use of a filter of from 2 to 3 mm. of aluminum.

The general condition is always considered in determining the rate of irradiation. Following the second irradiation of the affected side the treatment of the normal breast is carried out. For this a 2 mm. filter is sufficient as a rule.

After the treatment the patient is kept under close observation for a period of years and is seen at frequent intervals usually every month. At each visit a careful physical examination is made. The presence of intercostal neuralgia is of importance as it often denotes spinal metastasis. When recurrence or metastasis occurs the use of weak filters will cause the skin to break down. Both the filters and the irradiation must be strengthened. Iselin reports the following results:

A patient operated upon in 1904 had carcinoma tous metastases in the supraclavicular gland in 1906. She was irradiated up to the point of slight injury of the skin. Five small recurrences developed in the scar. One was excised and the other irradiated. The patient has now remained well for twenty years.

In two other hopelessly inoperable cases equally good results were obtained. In another case the patient was operated upon in 1906 for a rapidly spreading medullary carcinoma. The prognosis appeared to be very unfavorable but the patient is still alive. In this case no irradiation was given. Iselin explains the cure by assuming that the inflammatory reaction from the operative shock stimulated the cells of the body that the carcinoma cells were destroyed.

A case is cited also to show the importance of the resistance of the normal tissues surrounding a carcinoma.

With the use of the technique described Iselin was able to obtain 50 per cent improvement in the

results of operation in the Basel clinic in the period from 1906 to 1913. In twenty eight cases which were not irradiated immunity from recurrence and metastasis was obtained for three years in 18 per cent and for five years in 12 per cent. Of the irradiated cases—twelve with a radical operation eighteen with a non radical operation and six with a recurrence and glandular metastases—immunity was obtained for three years in 39 per cent and for five years in 30 per cent. In 1921 seven of the patients who were treated by irradiation in 1918 were in good health, two had died of cancer and three had died of other diseases or old age. Of the patient still living none had had a pure scirrhus carcinoma.

Iselin has found that in inoperable cases X-ray treatment often renders the case operable.

ALTON OCHSNER, M.D.

TRACHEA LUNGS AND PLEURA

Mandelbaum, M. J. Reverse Tracheotomy (An Original Method for Rapid Tracheotomy with a New Instrument). Preliminary Report. *Laryngoscope* 1917, xxx, 187.

The author presents an original method of reverse tracheotomy which has been tested on animals, human cadavers and patients. The reverse tracheotomy is a scythe shaped hollow cannula curved on its long axis in an arc equaling about half a circle. At the upper end is the handle and beneath this is the cannula opening through which the knife end of the shaft is inserted.

The patient is operated upon in the sitting or lying position. The operator uses his right hand to pass the tracheotomy while his left index finger is inserted over the dorsum of the tongue to hook over the epiglottis and thus fix the larynx and from there is forced between the vocal cords to emerge between any of the interspaces of the upper three or four tracheal rings. After the skin puncture has been made a proper tracheotomy tube can be inserted.

By this procedure severe hemorrhage, asphyxia, tonsillar unsatisfactory tracheal openings and septic pneumonia or lung abscess may be avoided. The insertion of the tracheotomy into the esophagus may be avoided by (1) passing the instrument between the vocal cord by direct or indirect vision and verifying its position in the tracheal canal by feeling its distal end between the tracheal rings or (2) placing the ear near its upper end to determine whether air is coming through the tube.

The author does not claim that this method should replace the classical operation but offers it as an additional procedure which under certain conditions may prove of value. GEORGE R. McALLIFF, M.D.

Smyth, D. C. and Schall, I. E. A. Pneumography by Lipiodol. Its Present Uses and Limitations. *Bull. M. & S. J.* 92, cxcii, 1891.

The authors state that there is no simplified method of using iodized oil to obtain information in obscure lung conditions. They believe that iodized

oil should be employed in all conditions only when other diagnostic method have failed

In the Thoracic Clinic at the Massachusetts General Hospital patients with tube culi are not subjected to broncho copy or X ray examination with the use of lipiodol

In the diagnosis of lung abscess lipiodol has not proved of material assistance. Abscess cavities usually communicate imperfectly with the bronchi. The introduction of oil after the spiration of pus from the terminal bronchus was often followed by massing of the oil which was erroneously interpreted. Experiments on dogs have demonstrated that 40 per cent of lung injected with lipiodol show the picture of pulmonary abscess. Solutions weak enough to prevent massing are too opaque to cast shadows.

In the method now used by the author the oil is introduced into the main bronchus. The body temperature following thorough cleansing by broncho copy and the patient is then placed in a position which will cause the oil to enter the desired area. In tracheal abscess it has been found impossible to obtain fluid levels and to date only two cases have been seen in which the abscess communicated with the bronchus so that direct bronchoscopic examination was possible.

Bronchiectasis and stenosis can be easily demonstrated by the use of the oil but bronchubecobonate powder gives better delineation.

In the authors opinion any case of broncho copy ought to require pneumography as a definite diagnosis. It is obscure enough to require diagnosis by bronchoscopy and if the two procedures are limited to the more important at the present time.

WILLIAM E. SIMMONS, M.D.

ESOPHAGUS AND MEDIASTINUM

Iedenwald J. Zinn W. F. and Feldman M.
Cancer of the Esophagus. *J. W. S.* 97
169

Cancers of the esophagus constitute a very considerable percentage of carcinomata of the gastrointestinal tract. Their report of frequency varying from 5 per cent (Cutman) to 20 per cent (Fortis). This article is based on a study of 8 esophageal cancer cases ranging from 1000 cases of carcinoma of the gastrointestinal tract.

The disease is most common between the forties and sixties years of age but has been known to occur before the fortieth year. The average age at which it develops is the fifty-fifth year in males and the fifty-eighth year in females (Turner). It is from five to seven times more common in males than in females.

The growth is usually located at one of the physiological narrowings of the esophageal lumen—the entrance of the esophagus or the aortic bulge on the chial or diaphragmatic contraction. Vignos and Turner agree that in female the growth is found most commonly in the upper third of the esophagus whereas in males it is usually situated lower.

Squamous celled epitheliomata and adenocarcinomata constitute more than 90 per cent of esophageal tumors. Esophageal carcinoma usually primary in the esophagus but occasionally may be secondary to carcinoma of the pharynx, thyroid or cardia. It attacks the mucosa first. Later it spreads from the superficial beginning to involve a large portion of the esophagus. Its direction of growth may be longitudinal or circular. It entirely the esophageal lumen becomes occluded and hypertrophy and dilatation occur above the lesion. The tumor cells invade the coats of the esophagus and extend to the surrounding structures and adhesions form between the esophagus and these structures. Infiltration of the cervical glands and sometimes of the left supraclavicular glands may occur early. The tumor may perforate into the bronchus, lungs, aorta or pericardium and may form metastases in the lungs, pleura, spine and thyroid. Hemorrhage from the erosion of a vessel is a frequent cause of death.

The early symptoms of cancer of the esophagus are vague and uncertain. Before there is any interference with deglutition the patient may complain only of unusual sensations in the swallowing and a lump in the throat. Other symptoms are slight discomfort in the back, belching, the upper abdominal region, the shoulder or abdomen, a cough, hiccup and increased mucus secretion in the throat. One of the most prominent later symptoms is dysphagia. In its early stages the dysphagia is usually intermittent and caused by spasms. Early ulceration may be especially the regurgitation of small amounts of blood and the appearance of blood in the stools. Pain, cough and hoarseness are usually late symptoms. The authors report a case in which cough and hoarseness were early symptoms but the esophagopathy was not diagnosed at any time. Eventually the condition causes an anorexia and severe and progressive difficulty in deglutition. Dilatation above the obstruction suggests a test when the obstruction is in the third third of the esophagus. In the later stages the usual general symptoms of carcinoma appear and with the appearance of these symptoms still other symptoms are produced.

Cancer of the esophagus should be suspected when there is a complaint of dysphagia, regurgitation of food, weight loss, and a feeling of fullness. The physical examination of the esophagus is usually negative. The roentgen examination of the esophagus by the esophagogram should always be preceded by the esophageal py. Under the fluoroscopic examination a slight elevation of the upper third of the esophagus is usually the first sign of the disease. Discomfort frequently at the barium esophagus is the first sign. Films are unsatisfactory in the early stages. Esophagoscopy gives the most accurate information but is not without danger as perforation may result from the instrument. It is of advantage for direct visualization and the removal of a piece of tissue for biopsy.

According to Jack the indications of early cancer as seen on esophagoscopy are (1) absence

of one or more of the normal radial creases between the folds (2) asymmetry of the inspiratory enlargement of the lumen (3) a sensation of hardness of the wall on palpation with the tube and (4) failure of the involved wall to wrinkle readily when it is pushed upon with the tube mouth

Other characteristics emphasized by Jackson are a tendency of the œsophagus to bleed rigidity of the œsophageal wall and absence of dilatation above the lesion except in the advanced stages of the condition

In the differential diagnosis the following conditions must be ruled out benign strictures such as those caused by the swallowing of caustics syphilitic strictures simple ulcers with stricture cardiac spasms with idiopathic dilatation of the œsophagus and external pressure on the œsophagus from an aneurism mediastinal tumor or affection of the spine

The prognosis is always poor but the squamous celled epithelioma is less malignant than the adenocarcinoma The duration of symptoms averages four and a half months but ranges from three weeks to two years

The immediate cause of death is inanition cachexia perforation or hæmorrhage due to the ulceration of a large vessel

When the diagnosis is established surgical interference must be considered Removal has been moderately successful in a few cases and its results would undoubtedly be improved if the patients came to operation earlier Gastrostomy is the best palliative procedure but should be performed before the very late stages while the patient is still in good condition It gives great temporary relief and prevents death from starvation

Dilatation with bougies is of doubtful value and associated with the danger of perforation Radium and the roentgen rays give little relief The use of radium has caused perforation

The diet should be regulated to prevent irritation

Palliative measures are advocated since radical removal is associated with great danger and only a remote chance of success E S PLATT M D

Carrington G L Experimental Surgery of the œsophagus *111 S 8 92 1 xxvi 505*

A number of approaches have been tried for operative work on the œsophagus In the neck an incision along the anterior border of the sternocleidomastoid muscle gives satisfactory access In the chest the long intercostal incision popularized by Torek and the posterior mediastinal route are used most frequently A few surgeons prefer the anterior route removing the sternum

With regard to the necessity for drainage there is a difference of opinion Some surgeons establish a tight drainage while others close the wound air tight without a drain Maintenance of lung expansion is

of first importance as the pleura seems to be more easily infected in the presence of a pneumothorax

In the technique used in the author's experiments on dogs the œsophagus was encircled by narrow tapes placed 2 in apart and drawn tight enough to prevent leakage but not tight enough to damage the muscular coat Next an antiseptic solution was injected through a small incision or by means of a Luer syringe and left for a sufficiently long time for sterilization The œsophagus was then cut and the anastomosis made with a row of continuous sutures through all of the coats a row of interrupted Lembert sutures through the muscle and adventitia invaginating the first row and a row of 6 interrupted Lembert sutures through the muscle and adventitia to relieve tension

The results were successful in 50 per cent of the dogs on which this operation was performed by the cervical route and in 33 1/3 per cent of those on which it was done by the thoracic route Strictures were avoided by establishing the anastomosis with the viscus fully expanded Marginal ulcers at the site of the anastomosis were caused by the sutures in almost all of the animals but Carrington considers silk better than catgut because of its durability The chief problems in œsophageal surgery are the prevention of tension and infection

CHESTER L CREAN M D

MISCELLANEOUS

Melville S and Others Discussion on X Rays in the Diagnosis of Intrathoracic Growths *B 1 M J 192 11 75*

Since the roentgen ray has been used in the examination of chest lesions the diagnosis of intrathoracic growths has been greatly facilitated

Of benign neoplasms the authors discuss fibroma and teratomata The roentgen evidence of a fibroma is a well defined rounded opacity usually arising from the posterior wall of the thorax The use of artificial pneumothorax may aid greatly in its recognition Teratomata commonly arise in the anterior part of the chest they are fairly well defined though often markedly irregular

Carcinoma of the lung is comparatively common constituting over 4 per cent of all carcinomata The roentgen signs presented by it depend largely on the stage of its development its location and the secondary manifestations produced by it The occurrence of sarcoma as a primary malignancy of the lung is doubtful The glandular enlargements of Hodgkin's disease are usually associated with similar enlargements elsewhere Tumors of the mediastinum although readily recognizable as such in the roentgen examination frequently cannot be differentiated as to their origin or nature To decide whether or not pulsation is transmitted is often difficult

ADOLPH HARTUNG M D

SURGERY OF THE ABDOMEN

GASTRO INTESTINAL TRACT

Brunn H Card osp m S g Cl \ 1 9

Brunn t t t the cau e of cr ho pr m is un kno n l th t the te m ard f m a m nome r the co lit i t t cr dnc end of the stomach but t th l e end of the ophagus The symptoms re f rly typic l

A ca e op rate lupo by Brunn v r th t of a man forty eight v rs f ge ho f st te l d f f u l t n small wing t e ty fi e year previ u ly For three months bcf e he c l t d B un n he h l b en un able to s all hi fo d

N v e aminat n h v l m ked dilatatio f the asophag and phago copv e e l a s c ab ut 8 c n d m t r

As it wa clear e i l t that Plumme d lat ou l n t t r thr ough the mall jeni g int the ston h the m th l of Mikulcz w us d the tomach being open l and the x ophagu dilated manually Afu t ge llatio v obta e l

The patient m l v in e tful reco e v g u n e d 3 lbs a l l n o v a b l e to s t a l l o v n k i d o f food ithout d e m f r t H R R W F r M D

Straling F T l e R e u l t s o f T n t y I Y e a
Operate Treatm t t f G s t a d Du e l
Ulcer (l k l j h i t T l i f
i G l k k h t i M k l Z l f
i i m) l f f k l c l 9 7 d 8

In th c e of 56 p t n t t t e l f r g t or duo s al u l e r b) p t i n t p e r f o r e l i t h a total r t a l t f i n t The j r t o include l t r n t n s d e l e e o f r a t h e y c u l l e l e t e r m l

Of the 6 pati n t ho e p e n e t e d i d c a l l y at the p r t p e r t o 7 6 p e r c t l d h l e of the 300 t r a t e l n t i l y at h r t 7 p e r c e n t d i e d Of th 483 pati n t ho p e r a t e d p b e f r D e c e m b 3 9 5 50 t r a d O f the latter 89 p r c t b e o s i d l u r e d h l o s p r e t a e t h e u b l e t o r k o h e s y m p t m h c h j e c l u t h a r y p t o n t h t the ulce h h e a l l F h u n r d p t i e t c t i t u t 4 4 p e r c n t of th s e p r t e u p o a l l y a n l 6 p e r c t f t h t e a t e d e v t e l y

If it b e u m e d t h t r e s u l s n t h u n t r a e d cases w e c the s a m a n l t h a t t h i n t h 7 c a s t r e a t e d r e c e n t l y a l l s i m i l a r t h e i n c i d e n c e o f c u r e n 56 s r g c l l y t r i d c a s e s o u l d b e 8 5 p e r c e n t a n d t h t f a l l a r n c l d g o p e r a t i d a t h s a n d cases w i t h p e s t s y m p t m s o u l d b e 8 5 p e r c e n t F a i l u r e s u l t d 3 8 p e r c n t o f a l l c a s e s t r a t e d c o n s e r a t i v l y a n d p e r c e n t f t h o s e t r e a t e d r a d i c a l l y I n f o t v t h r e e c s e t o o r m r e

inter ent ns ver nece v r y to obt n a cure If each re p e r a t i o n r e g a r d l e l s a f a i l u e f t h e p r i m y o p a t i o n v a n w h r c o s o b t r u e d v e n t u a l l y t h e c u r e n c f f a i l e s i s n e c e s s a r y t o 3 3 p e r c e t O l l y t h c t r c t t r t e r i a d o e s t h a u t h o r s i n c l e e f u c c s s f a l l b e l v t h e a e a g e s r e p o r t e d b v C u l e k e

Sturl ger e t m a t t h a t i n n e a r l y o n e f o u r t h o f a l l i c o p e r a t e l u p o t h e r e l i t t l e o r n o i m p r o v e e t T h e r v e t n o p e r a t v e t a t m e n t t h a t w i l l g i v e r l i e f o a u r a c u e i e e r v c a s e o f g t r i r l u o d n a l u l c A l t h g h t h e B i l l r o t h I d i l l r e c t c o l d e d t h e b e s t p r o c e d u r e c a n t b e e t r e l y a t f i e l d t l t h e r e s l t s W t h u t l u b t g r t a l n c h a e b e e m a d e i n t h e l a t t e t h e v a s b u t t h e g o a l f a r f o m b g r e h e d

A c c o r d i n g t o t h e t h e s o f t h e I n n s b r u c k C l i n i l a p a r o t o m y i n d i c a t e d f o l l o w i g u n s u c c e s f u l m e d i l t r e t m e t i h n t h e v f i n d i n g s a r a t l e a s t h g h l y u g e t i e f u l c e r t h e c l i n i l m a f e s t a t i o s f l e a r e d t n c t a n d t h e d a n o s i f u r t h e r c t m d b y t h e g t r i c h e m i s t r y a n d t h e p e s e n c e o f b l d i t h e t l s T h e d e s i i a p a t i e n t t o r e m e h i o k n t h e s h o t s t p o s s i b l e t i m e s h o u l d l o l t k e t o c o n s i d e r t i o n T h e s l i g h t e s t s u g g e s t i o n f i m l n a y i d c a t p l o a t o n R e s e c t n d i a b l b u t n o t m p e a t v e T h e m e t h o d o f b e i t h e a t c o l i c B i l l o t h I I p r c e d u e v t h a B r u n a t o i

I n i p p l e g t i c u l c r t h e L e m p p j j u o s t m v a d a b l b u t h p a t i e t s p e m i o n m u s t b l t a i d t f r e t h e p a t i n i s p e r f o r m e d I n i f a b l d o d a l u l e r a n t e r i o r a n t e r i o g a s t r o e n t e r o t m v j l u e n t e o a a s t o m o s s h o u l d b e d o n e I c e s t h n e a t t m a c r o p i c f i d i n g s s e v e r e h n i l m p t o m n d u u c e s s f u l r e s u l t s f r o m m d l t a m e n t n d i n a c e i t h h y p e r t o p h y o f t h e p y l o u s r s t n i i d t e d I n m i l d c a s e s e p l a r t r y g a t r t m y s h o u l d b e d o e a n d f o l l o w e d b c l u s i e f t h e b d o m e n w o u t f u r t h e w o r k f t l e t n d g a n e g a t i e D a m a g s h u l d b e e s t b h s h e l o l f t h r e i u n c t n t y a s t t h e p o s s i b i l t y o f s u t u r e I n n c o m p l t e p e f o r a t o n o p e r a t o n s h o u l d b e d e l a y d u n t i l a l t e n t a p e r d a s p o s s i b l e A c u t b l e d i g u l r c q u e s i m m e d a c e s e o n W h e j e p t i c u l c e r o f t h j e j u n u m i s s u p e c t e d a n e x p l o t e h p r t o m y a d p s s i b l y a d a l o p e r a t i o n i l b e n c a r y S l e e e r e c t i o a d p y l o i c e c l u a r e n l g e r u s e d i n t h e t r e a t m e n t o f u l c e r a t t h e I n n b u c k C l i n i c

A s t t i b o t h e r e i s n o o p t i m a l m e t h o d o f t r e a t g l l a c o f g a t r a n d d u o d e n u l c e r T h e i n g e n u u d e a o f N k l d n n w o k e d o u t b y W o l f r h s l f t i t i m p s s o n o n t h e g a s t r c s u r g e y o f t h e i s t t v e n t y t e y e r s n t h e l o m o f t h e

gastro intestinal fistula. The establishment of such a fistula has been the method of choice either as an independent procedure or in the form of the Billroth II method or its modifications. The unmistakable tendency to return to the Billroth I method and the adoption and modification of this method by von Haberer indicate the change in our treatment.

In the further development of the treatment it is possible that gastrojejunostomy in the form of the Billroth II procedure will be reserved for those few cases of ulcer in which after subtotal resection anastomosis by the Billroth I method or termino lateral gastroduodenostomy is impossible because of too great tension or these procedures are interfered with by extensive adhesions about the descending duodenum. It will be a question whether even in such cases a von Eiselsberg jejunostomy is not preferable. The constantly increasing number of postoperative jejunal ulcers developing even after the radical Billroth II operation is so depressing that it seems questionable whether gastrojejunostomy in any form is justifiable.

GLASS (2)

Lewisohn R. Gastroduodenal Ulcers. Partial Gastrectomy Versus Gastro Enterostomy in Their Surgical Treatment. *J. I. M.* 135 197 191. 19 649

Horsley J. S. Partial Gastrectomy. *J. I. M.* 135 1927 191. 63

LEWISOHN following the lead of European surgeons particularly those of Germany and Austria advocates partial gastrectomy for both gastric and duodenal ulcers. Although in gastric ulcer the choice of resection has become fairly well established the proper surgical treatment of duodenal ulcer is still a subject of controversy. The author gives again the statistics from Berg's clinic at the Mount Sinai Hospital New York which led him to abandon gastro enterostomy in favor of partial resection. He does not agree with Woolcy that the high incidence of gastrojejunal ulcer following gastro enterostomy at the Mount Sinai Hospital is due to the fact that many of the patients are Jews.

The disadvantages of gastro enterostomy for duodenal ulcer may be summed up as follows:

- 1 Many ulcers are not cured by this method
- 2 Local excision of duodenal ulcers is often not feasible or possible
- 3 Gastro enterostomy for healed ulcer with stenosis is not practical because it is impossible to tell by palpation whether or not an ulcer has healed
- 4 Resection is difficult after gastro enterostomy
- 5 Gastro enterostomy does not safeguard against hemorrhage
- 6 Partial gastrectomy produces in most cases an achlorhydria which appear to be an important factor in preventing gastrojejunal ulcer
- 7 Gastro enterostomy seems to have a mortality as high as or higher than that of resection

Lewisohn points out that the stomach which is removed in a case of duodenal ulcer is not normal as

the pyloric end shows a marked gastritis in almost every case.

The contra indications to resection are severe diseases of the kidneys, lungs and circulatory apparatus and cases in which the ulcer is so near the common duct that radical removal is inadvisable. There were but two cases of recurrence of symptoms among thirty seven patients subjected to resection for duodenal ulcer. Lewisohn believes that in both the failure was due to the removal of too small a portion of the stomach.

HORSLEY emphasizes the physiological activities of the stomach—digestive, absorptive and motor. He states that the great majority of gastric disorders giving rise to symptoms are due to a disturbance of motor function either direct or reflex. The importance of the lesser curvature to the motor activities of the stomach must be borne in mind. The influence of the nervous system on the stomach is of importance but has been overemphasized. The attempt to standardize operative procedures on the stomach is wrong; each case should be treated according to its particular requirements. No one type of gastrectomy is applicable to every case. The bases of all gastrectomies are the Billroth I and II procedures and their numerous modifications.

It is best to attempt to restore the gastric outlet by anastomosing the distal end of the stomach to the duodenum if this is possible. Horsley describes briefly a modification of the Billroth I operation which he has been using with very satisfactory results for four years. The anastomosis of the duodenum to the stomach is made along the lesser curvature of the stomach rather than along the greater curvature, the lesser curvature being thereby kept in line with the duodenum. After the posterior sutures have been placed the anterior wall of the duodenum is split for a distance of from 1 to 1½ in. In this way the diameter of the duodenal stump is increased so that often an end to end anastomosis can be done. If an end to end anastomosis is impossible the redundant stomach can be easily infolded. The dangerous triangle is thus eliminated.

This operation has been performed on eighteen patients and in every case the postoperative course was remarkably smooth. In eleven cases it was done for ulcer, in six for cancer and in one for gas trocolic torsion. All of the patients with ulcer recovered though one had a severe postoperative hemorrhage and another had a hemorrhage 10 years after the operation. Of the six patients with cancer one died as the result of the opening up of an inflammatory mass on the surface of the pancreas. Of the five others one is living sixteen months after the operation, two died ten and nine months respectively after the operation and two were operated upon only recently.

In the discussion of these reports C. H. MAYO stated that even when half of the stomach is removed we are not sure that we are removing all of the acid from the stomach and even if all of the

acid is removed we cannot be sure that such removal will prevent ulcer formation since many anal ulcers may occur with achylia. He regards Horslev's suggestion of making the anastomosis along the lesser curvature as important but called attention to the fact that unfortunately most ulcers occur along this curvature.

CURLE said that resection gives the most satisfactory results in gastric ulcer but not in duodenal ulcer. In the latter ulcer however resection may be necessary if other treatment fails. The type of operation indicated varies with the case.

LURE emphasized the necessity of trying medical treatment persistently and adequately before assuming that it has failed. In the cases of patients who have developed a gastroduodenal ulcer following gastroenterostomy gastritis may be the best operation if the stomach can be delivered and the general condition is good. For cases of gastric or duodenal ulcer in which medical treatment has failed and particularly in those in which bleeding has occurred, Lahey prefers partial gastrectomy unless the patient is a poor risk and the stomach cannot be readily delivered. He advocates gastroenterostomy should be done and followed by a strict dietary and medical regime.

GILBRIDE said that up to the present time gastroenterostomy is the indication to meet the requirements of the particular case has proved to be the most satisfactory procedure. The effects of the emptying of the stomach are not known and as a routine measure partial gastrectomy is an urgical.

ARNOLD said that of patients subjected to gastroenterostomy who were recommended because of recurrent symptoms at the hospital where they had been sent, the Veterans Bureau none gave history of adequate medical treatment before the operation.

LEWISON stated that all of his patients had had medical treatment before operation.

HORSLEV said that medical treatment should be given in practically every case of peptic ulcer. Whether it is a local or not and that for ulcer to be of duration with mild symptoms and especially those in which duodenitis is all that is necessary. However it is not wise to continue medical treatment for years.

MAYHEW IMA MD

BHMANSON G. O. Secondary Rejection of the Stomach in Dogs and Cats After Gastroenterostomy. *Int J Surg* 1934; 1: 80.

The author reports a case in which a gastroenterostomy was performed and the symptoms recur and increased after a short or longer period of time. The question as to what measure gives the best prospects for permanent internal treatment is a well adapted diet followed by a satisfactory results. The best answer is given by dividing the cases into two groups according to the location of the symptoms.

Most of the cases were diagnosed as gastric with the so-called duodenal secondary syndrome. The clinical picture was the same whether the resected specimen showed only a more or less chronic type of suppurative gastritis or in addition a peptic ulcer. In such cases partial gastrectomy gives a good result.

Whether ulcer is present or not. The clinical symptoms seem to depend more upon the inflammatory changes than upon ulceration and the typical period of time in the clinical course evidently depends upon the different stages of the stricture.

The author's second group of cases is the one in which the symptoms were ascribed entirely or in part to the stricture and the cases are more or less typical. In several of the cases the gastroenterostomy seemed to have been performed on insufficient indications. In others the disposition toward development of colitis which may have been prevented by the operation was manifested by severe intestinal pain after the gastroenterostomy. In such cases it is chiefly the changed type of gastritis occurring in the intestine following the operation that is unfavorable to the condition in the postoperative period and favors postoperative intestinal symptoms. The treatment indicated is removal of the gastroenterostomy opening. By this measure the result of medical treatment are improved even though a complete cure is not assured. The cases seem to be a clinical basis for partial gastrectomy in the cases.

The factors in a physiological passage and of friction in the accumulation of the factors of chemical composition of the intestine of severe postoperative intestinal disturbances.

Steinberg M E, Brouge J C, and G. G. J. J. Changes in the Chemistry of the Contents of the Stomach Following Gastric Operations. *J H S G* 1934; 40.

The reason for the decrease in the gastric acidity after gastroenterostomy is much disputed. Some investigators believe that the important factor is the lack of stimulation of the fundic glands by the contact of food stuff with the gastric mucosa. Others are of the opinion that more rapid emptying and neutralization by regurgitation of duodenal contents are the principal factors. It is evident however that gastric acidity does not remain elevated in the mucosa since the antrum contains only a small amount which secretes no acid.

In experiments on dogs the authors studied the response to a meal in the lower pouch before and after gastroenterostomy and before and after a trim resection. The amount of secretion was slightly decreased after gastroenterostomy and increased immediately after resection but not in the case with acid change.

In an experiment they introduced hydrochloric acid into the stomach before and after a gastroenterostomy and after a resection of the antrum in which the gastroenterostomy was left intact. Normally it required at least an hour for the

acid to be reduced to 0.15 per cent while after the gastro enterostomy this occurred in from thirty to forty five minutes and after the resection it occurred even more rapidly

In a fourth experiment the stomach was divided and external fistula to the fundus and the antrum were connected externally by a glass tube. When beef extract was introduced into either the antrum or fundus the antrum secreted no acid whereas the fundus secreted acid in either case.

In the fifth experiment the response to beef extract and to hydrochloric acid was observed before and after resection of the antrum and after regurgitation of the duodenal contents was prevented by dividing the duodenum above the anastomosis and uniting it to the ileum. After resection of the antrum neutralization occurred rapidly but after diversion of the duodenal contents to the ileum high acidity persisted until no more contents could be aspirated. These findings demonstrated that the change in the chemistry of the stomach contents after antrum resection is due chiefly to the regurgitation of alkaline duodenal juices. BURTON CLARK, JR. M.D.

MacLennan A. Congenital Abnormalities Acquired Causes Treatment. *Brit M J* 1917 11 818

Acute intestinal obstruction causes practically the same symptoms in children as in adults but when relief is in prospect the prognosis is somewhat less serious in children than in adults. However in many obstructions due to congenital malformations relief is impossible.

Of the congenital malformations the author discusses duodenal stenosis jejunal and ileal atresias colic obstruction rectal obstruction exomphalos Meckel's diverticulum and strangulated hernia. In all cases of developmental obstruction the bowel distal to the obstruction tends to be in a state of what might be described as embryonic spasticity. Thus a functional atresia is superimposed upon the anatomical atresia. It is to the former condition that the practically hopeless prognosis is due.

Of acquired causes of intestinal obstruction the author discusses kinking of the bowel due to contracting cicatrix from tuberculous infection of the mesenteric gland strangulated omentum a strangulated Richter hernia and mesenteric embolism. He does not classify intussusception among obstructions.

The symptoms of intestinal obstruction are vomiting which is persistent and changes in character in a well recognized manner which makes it pathognomonic visible peristalsis which may be accentuated by tapping the abdomen or lightly scratching the skin and distention which is due to the formation of gas and soon becomes associated with paralysis so that the escape of the gas gives no relief.

The treatment consists in lavage of the stomach and early operative interference. After the abdomen is open the distended bowel should be avoided a gentle search made for the undistended gut and the obstruction approached from the sound side. The

author believes that an enterostomy should be done regardless of other procedures that may be indicated. A fistula formed through the omentum shows a marked tendency to close spontaneously. To insure its function an enterostomy should be made high in the jejunum.

Early diagnosis and prompt intervention are of the greatest importance. Another factor governing the prognosis is the degree of ileus present. This depends to some extent on the amount of handling which is found necessary at operation as well as upon the nature of the obstruction and the patient's resistance. ARTHUR L. SHREFFLER M.D.

Muzeniek P. Ileus in the Material of the First Municipal Hospital of Riga (Der Ileus nach dem Material des I. Rigaschen Stadtkrankenhauses). *Dut de Zt f Ch* 1917 11 35

This report is based on 3,4 cases of ileus operated upon during the period from 1911 to 1917—5 cases a year or 0.36 per cent of all cases of surgical disease seen in a year. In 1918 and 1919 there was a very marked increase due to the unfavorable conditions of the period of military occupation—hunger malnutrition and the use of indigestible vegetable substances and food substitutes. The cases most frequently affected were in decreasing order the Jews the Germans the Lithuanian Poles and the Letts. Seventy two per cent of the patients were males. As was the case in Russia Finland and the Balkans the most common type of ileus was that associated with volvulus. Volvulus occurred in 47 per cent of the cases whereas in Germany Austria and Switzerland it occurred in from 5 to 10 per cent. This also must have been due to the economic conditions and habits of life of the people.

In 59 per cent of the 173 cases of volvulus the large intestine was involved and in 53 per cent the sigmoid flexure. In Germany volvulus of the sigmoid flexure occurred in 31 per cent. Males were affected by volvulus of the flexure eight times more frequently than females. In every case there was a mesosigmoiditis which could not be easily explained on the basis of obstipation alone. As the result of mechanical processes such as stretching and tearing of the overfilled loops which had sunk down into the lesser pelvis there occurred extravasations of blood and tears in the mesosigmoid and to the es was added an intestinal catarrh with bacterial infection. A cicatricial narrow and long mesosigmoid and a long dilated flexure with thickened walls and narrowing of the areas where the sigmoid joins the descending colon and the rectum were the factors which disturbed the coordinated function of the flexure and mesosigmoid and led to volvulus. Frequently this occurred after an immoderate meal (holiday feasts).

Careful inspection of the abdomen nearly always reveals the axis of torsion of the flexure its configuration and its boundaries.

As a rule the evagination method of Grekow was used. In half of the cases (those treated during the period from 1911 to 1919) fixation methods were

employed. In these the mortality was only 12 per cent but a recurrence developed in eight cases (19.5 per cent). In the cases treated by one stage or two stage resection the mortality was 73 per cent.

The material reviewed indicates that adhesions play the chief role also in volulus of the small intestine as they favor shrinkage contraction and thickening of the mesentery which prevent movement of the bowel (fifty five cases). In fifteen cases there was a volvulus of the cecum.

Of all of the patients with leucocytes 68 per cent—49 per cent from volulus.

In 104 cases (21 per cent) high adhesions were the cause of the intestinal obstruction the mortality was 48 per cent. According to Heschl Thebesius most cases of intestinal obstruction are due to postoperative adhesions but Riga reported that adhesions developed in only 9 per cent of the cases or 39 per cent of all cases of leucocytes due to adhesions.

In the rest of the cases the adhesions were due to Meckel diverticulum the appendix the mesentery tears in the mesentery intestinal incarceration obturation complete invagination (fourteen cases as children under fifteen years of age were not included) or miscellaneous reasons as of the dynamic or spastic type (thirteen cases). The total mortality was 5 per cent. A favorable prognosis depends chiefly upon early operation. T. A. (Z)

Tanas and Okuncy: Six Cases of Intestinal Inagination (S. D. G. T. N. T. L.)
B. H. D. S. I. D. I. 971 95

Of the six cases of intestinal invagination the large bowel was involved in five of the small bowel four were affected. Inagination of the cecocolic type and necrosis of the cecum were present in three of the four cases. Inagination of the small intestine due to a submucosal polypoma. The latter the only case in which a polypoma could be found that would account for the invagination.

The first case a thirty four year old man suddenly ill with acute abdominal pain. The last day he vomited and the day following he had bloody fecal stools. When the patient entered the hospital on the third day of illness his abdomen was rigid. The stool was of a purplish color. A diagnosis of intestinal obstruction was made.

Operation performed revealed a 50 cm. of bloody fluid in the abdominal cavity and invagination of 70 cm. of the ileum. The bowel was resected and a side to side anastomosis made. The resected specimen showed no pathological changes that could account for the condition. The patient made an uneventful recovery and was discharged twenty days after operation.

Case 2. A thirty five year old woman who became suddenly ill with a vomiting and severe abdominal pain after a meal. The pain began in the epigastrium and radiated throughout the abdomen. During the next few days the pain

subsided and the patient was able to take liquid nourishment. For three weeks she was comparatively comfortable but lost considerable weight. At the end of that time the pain recurred.

When the patient first entered the hospital ten days after recurrence of the pain she was weak and debilitated and gave a history of pain and complete suppression of gas and fecal matter for the previous several days. On examination an elongated tumor the size of a fist could be felt in the upper abdomen and violent peristaltic movement associated with the pain occurred from time to time running from right to left.

Operation revealed a large tumor on the surface of the colon from the cecum to the pelvic flexure—a cecocolic intussusception. When the intussusception was engaged the ileum entered the cecum loose in the lumen. At the site of the appendectomy the cecum and right colocolic junction to the pericæcocolic pouch. All the abdominal incision closed. The patient was discharged on the tenth day.

The third case a thirty four year old female of a few hours had been sick for five days. The attack began with colicky pain and vomiting. Nausea followed. When the patient was brought to the hospital she was very poor condition. The patient gave a history of colicky pain in the abdomen. It was noted an elongated tumor could be felt extending from the right iliac fossa upward to the umbilicus. No peristaltic waves could be seen. The patient was placed in the left lateral position. The color of the colon showed the tumor entering the cecum in the region of the umbilicus.

Operation revealed a intussusception of the cecocolic junction into the ascending colon. The patient died from peritonitis the day after operation. The rectal bleeding was a large quantity.

Case 4. A thirty four year old female had had a history of abdominal pain for the last few years. The pain was in the right iliac fossa. The patient felt better after rest and a diet of four or five small meals. When the patient entered the hospital she was ill. The abdomen was rigid. The stool was of a purplish color. A diagnosis of intestinal obstruction was made. Operation performed revealed a 50 cm. of bloody fluid in the abdominal cavity and invagination of 70 cm. of the ileum. The bowel was resected and a side to side anastomosis made. The resected specimen showed no pathological changes that could account for the condition. The patient made an uneventful recovery and was discharged twenty days after operation.

Operation revealed a intussusception of the cecum into the right colon. The patient was placed in the left lateral position. The color of the colon showed the tumor entering the cecum in the region of the umbilicus.

Case 5. A thirty four year old female had had a history of abdominal pain for some time. The pain was in the right iliac fossa. The patient felt better after rest and a diet of four or five small meals. When the patient entered the hospital she was ill. The abdomen was rigid. The stool was of a purplish color. A diagnosis of intestinal obstruction was made.

of diarrhoea and constipation with meteorism. The first attack of pain had occurred six months previously. The pain was very severe in the region of the umbilicus and was associated with regurgitation, gurgling and the passage of considerable gas. No fecal matter was expelled. At first the attacks came on at intervals of about two weeks but ultimately they occurred daily.

Examination revealed beneath the umbilicus a firm elongated mass which could be moved about and disappeared from time to time. The reappearance of the tumor was accompanied by peristaltic movements were marked.

At operation an intussusception about a submucous lipoma of the transverse colon was found. The mass was dissected, the part of the bowel bearing the tumor was resected and in end to side anastomosis was made. The postoperative course was smooth.

Case 6 was that of a man of forty years who for two years had had attacks of iliac pain on the right side associated with vomiting and constipation. During the last attack which occurred ten days previous to the examination the vomiting approached the fecal type. When the patient was first seen by Parnescu he was sick and weak. During the examination he was seized with violent pain and peristaltic waves running from the right iliac fossa toward the hypochondrium were noted. A tumor about 40 cm. long could be palpated.

The condition proved to be a cecocolic intussusception with strangulation of the appendix by an adhesion. The intussusception was disinvaginated and the appendix removed. The patient was discharged ten days later.

The author emphasizes the acute sudden onset of the condition followed by cessation or amelioration of the symptoms—crises of acute or subacute abdominal crises approaching the clinical picture of chronic intussusception. Except for the case with tumor nothing was found which explained the intussusception. The pathological changes in the bowel and appendix could be accounted for on the basis of strangulation. All of the cases were operated upon under spinal anesthesia.

In the discussion of this report IECHE stated that in the adult acute intussusception is very rare and usually of the chronic type. Immediate operation is not necessary. In the diagnosis which is difficult the roentgen ray is of great value.

CADENET stated that although intussusception in the adult is usually chronic and frequently due to tumor it may also occur acutely and without evident cause. In a case on which he operated the intervention was decided upon because of the intense pain rather than because of obstruction. Before operation the condition is most often diagnosed as appendicitis.

CFRNFZ agreed with IECHE that most cases of intussusception in the adult are of the chronic type and characterized by painful crises, a tumor and permanent or intermittent constipation. He

had recently seen a somewhat similar picture in a child.

OFINCYC said that the term subacute is some what confusing when it is applied to intussusception. It is used to denote cases with a history of one or more attacks followed by recovery without intervention in which there ultimately occurs an attack demanding operation. In the acute type the obstruction is the dominating sign.

MICHAEL L. MASON, M.D.

Gallagher W. J. Acute Traumatic Ulcers of the Small Intestine. Observations on the Effects of the Application of Clamps on the Gastrointestinal Tract. An Experimental Study. Arch Surg 1917 41: 689.

It is generally conceded that trauma may be a factor in the genesis of chronic peptic ulcer but opinions differ regarding the influence of operative trauma from clamps in the production of chronic jejunal and experimental ulcers. In the opinion of most clinicians hyperchlorhydria and operative trauma are the important causes of jejunal ulcer and Ivy contends that trauma and poor physical condition are important factors predisposing to chronic experimental ulcer.

The author performed four experiments on dogs. In the first experiment a study was made of the blanching pressure in millimeters of mercury on the gastrointestinal tracts of ten dogs. It was found that localized anæmia produced for forty minutes resulted in superficial ulcers of the duodenal mucosa.

In the second experiment the pyloric region of the duodenum and stomach in ten dogs was traumatized by clamps for from fifteen to eighty five minutes with just sufficient pressure to produce blanching. In the duodenum typical acute ulcers resulted from applications of thirty two minutes duration. Shorter applications produced only microscopic erosions and cellular exudate without gross change. These acute ulcers healed rapidly leaving scar tissue moderate dilatation and thinning of the duodenal wall and external adhesions. The clamps produced no gross changes in the stomach. Marked toxic reactions followed trauma to the duodenum.

In the third experiment a series of six procedures on three dogs ligation of the pancreatic duct and trauma to the duodenum by clamps resulted in emaciation, vomiting and delayed healing of the ulcers.

In the fourth experiment clamps were applied to the jejunum ileum and colon in six dogs. In the jejunum and upper ileum acute ulcers resulted but these were superficial and lacked the digested appearance of those produced in the duodenum. No ulcers could be produced in the lower ileum and colon.

From these experiments it appears that in dogs the application of clamps to the duodenum or jejunum with sufficient pressure to shut off the blood supply for about thirty minutes produces typical

acute ulcers which heal leaving typical scars and that trauma caused by clamps may favor the development of chronic experimental ulcer in dogs

By CLARK JR MD

LIVER GALL BLADDER PANCREAS AND SPLEEN

Troell A. A Case of Abscess of the Liver After a Peritonitis. *Id. Cl. Surg.* 97:144

In the case of a man twenty-two years of age who had had a whitlow for three weeks, symptoms leading to diagnosis of liver abscess developed about the time the whitlow healed. The liver abscess was opened and drained, and the patient recovered. On direct examination the pus showed the presence of rod but no further bacteriological studies were made.

Chiefly because of the absence of other sources of infection at the time at which the abscess developed the conclusion was recognized by the State Insurance as a sequel to the accident causing the whitlow and the patient was granted compensation for the entire period of his disability.

Carnett J. B. The Simulation of Gall Bladder Disease by Intercostal Neuralgia of the Abdominal Wall. *Id. Surg.* 97:144

Carnett calls attention to the fact that when the pain and tenderness of intercostal neuralgia involve the upper part of the abdomen on the right, they may closely simulate the pain and tenderness of gall bladder disease and that the mere history of a grossly or macroscopically diseased gall bladder at operation does not prove that the peculiar symptoms were caused by the gall bladder. It will be relieved by cholecystectomy. Carnett has found intercostal neuralgia to be the most common cause of abdominal pain and tenderness which are not relieved by upper abdominal resection. He states that many surgeons who have believed that upper abdominal resection will not cure pain and tenderness of the upper abdominal triangle have not yet learned that the same chronic pain and tenderness of the upper triangle are not cured by bilateral operations.

In every case of abdominal tenderness the abdominal muscles should be palpated while the patient holds his abdominal muscles as tense as possible either by contracting his diaphragm or by holding his head from the bed with the knee extended. Any tenderness elicited under such conditions will be peripheral in origin and localized. Tenderness elicited beneath the abdominal muscle area may be either parietal or intra-abdominal.

The author rejects the theory that a diseased gall bladder or some other abdominal focus may give rise to a visceral sensory reflex manifested by cutaneous hyperesthesia of the abdominal wall. He has found that the great majority of patients with skin tenderness do not have intra-abdominal lesions of any consequence.

When parietal neuralgia is present the history and bedside examination are often insufficient to establish the presence or absence of a visceral lesion, especially gall bladder disease. Under such circumstances the bedside examination must be supplemented by the Graham test, a gastroenteric examination and diagnostic bile drainage. Unless one of the three supplementary examinations gives very positive evidence of gall stones or cholecystitis unless there is reliable history or physical evidence unless the management of the gall bladder is demonstrably unusual, constitutional or local symptoms are peculiarly suggestive of cholecystitis. Carnett's formula is that whenever he detects the presence of intercostal neuralgia, the bilateral triangular regions of the presence of what have been referred to as local cholecystic history and findings of chronic or recurrent gall bladder disease. He refers to study the patient during a cutaneous examination after finding that the symptoms do appear when the intercostal nerve trunk is anesthetized with novocaine.

By L. S. STREIFER MD

Illingworth C. F. W. Types of Gall Bladder Infection. A Study of 100 Operated Cases. *Br. J. Surg.* 97:144

The frequency of occurrence of bacterial infection in the gall bladder has long been recognized but the relative frequency of the different types of organisms that may be isolated from the site of approach to the gall bladder are still matters of controversy.

The bacteriological findings of a recent year show little uniformity. Illingworth's analysis of infection in major types of gall bladder disease was as follows: (1) *Staphylococcus aureus* only 3 and (2) other causes of the cases respectively. In the majority of the cases the bacteria isolated were the organisms that frequently cause disease here in the human body. The typical cause of disease is the infection of the gall bladder from the nose. However, it is difficult to ascertain the source of infection, but it can be obtained only by making culture from the gall bladder itself as the bacteria in the terminal esophagus are diseased gall bladder. In his experience the organism most frequently found by such an examination are streptococci.

Bacteriological examination of the gall bladder by any of the bile from the liver is the best method for the purpose. The systemic bacterial streptococci are the most common. The lymphatic from the abdominal grade hepatitis is not infrequently a neighbor of such as the stomach, duodenum, pancreas and appendix or (3) the blood stream from the distant focus of infection.

The author reports a series of 100 bacterial local examinations of gall bladder obtained from the surgical cases of Wilkie of Edinburgh. In this investigation the attempt was made to answer the following questions:

1 Is the wall of the gall bladder or the bile more frequently involved by bacterial infection and what organisms are most commonly found in each?

2 Is any one organism more constantly present in the early stages of the disease and therefore likely to be an active factor in the production of the condition?

3 Is there any evidence that one of the three routes of approach is the usual path of infection?

Infection of the wall of the gall bladder was found in 62 per cent of the cases. Streptococci alone were present in 34 per cent, coliform bacilli in 17 per cent and both streptococci and coliform bacilli in 5 per cent. The bile showed infection in 40 per cent of the cases. In 16 per cent the infection was due to streptococci, in 20 per cent to coliform bacilli and in 1 per cent to a mixture of streptococci and coliform bacilli. Mixed infection was therefore found in only a few instances. *Staphylococci* were also infrequent. In examinations of 23 crushed stones only seven proved to be infected.

Gall bladders with thick, fleshy walls were more likely than others to give positive cultures but infection of the bile could not be foretold from the clinical appearance of the organ.

The typhoid bacillus was never isolated although at least three of the patients had a history of typhoid fever. This fact confirmed the experience of Judd who failed to isolate the typhoid bacillus in twenty-one cases with a history of typhoid fever.

Examination of the various layers of the gall bladder wall yielded no evidence indicating that one layer is more prone to infection than another.

The report is of interest in demonstrating the comparatively frequent occurrence of purely intramural streptococcal infection. The findings support the present day opinion that the spread of the organisms by way of the bile either from the liver or from below probably occurs rarely if at all.

The investigation is of interest also from the point of view of the Meltzer-Lyon test. As uninfected bile was found in 60 per cent of the cases it seems obvious that a negative bacteriological finding in this examination must be of no significance and does not even exclude gross gall bladder disease.

With regard to treatment the author states that the presence of active infection deep in the wall of the gall bladder as opposed to a catarrh of the mucosa tends to diminish our faith in those therapeutic measures which are directed solely toward disinfection of the bile and emphasizes the value of operative treatment. He suggests also that in the great majority of grosser lesions at any rate drainage by cholecystostomy is insufficient to eradicate the disease and cholecystectomy is the operation of choice.

CHARLES F. DUBOIS, M.D.

Hoffmann V. Masked Recurring Cholecystitis Without Stones (*Ueber latente rezidivierende Cholecystitis sine concretis*). *Berlin. Klin. Wochenschr.* 1917, 507.

In cholecystitis without stone formation the indications of disease are frequently not clear.

Often there is absence of definite colic. The so-called stasis of the gall bladder is usually dependent upon bacterial inflammatory processes which can be demonstrated only on microscopic examination. Occasionally patients with this condition are treated for months or years for gastric disturbances. The ingestion of food—especially foods rich in fat—is often followed by continuous pain in the epigastrium. The findings of physical examination are usually meager, only a moderate sensitiveness under the right costal arch being apparent.

At operation the serosa of the gall bladder has a dull appearance. The walls of the gall bladder are thicker than normal. Occasionally there are pericholecystic adhesions which if the stomach and duodenum are normal may be ascribed with certainty to gall bladder disease. Gall stones are absent. The mergence of the findings at operation is explained only by the subsequent microscopic examination.

The condition occurs with equal frequency in both sexes and often at an early age. A relationship to pregnancy is not so easily determined as in cholecystitis with gall stones. In a few of the author's cases the masked cholecystitis had been preceded by a non-specific adenitis.

In the differential diagnosis between masked cholecystitis and gastric and duodenal disease, normal findings in the stomach and duodenum indicate the presence of masked cholecystitis. The value of cholecystography in the recognition of this condition is still uncertain. In almost every instance of masked cholecystitis the gastric acidity is decreased. Anatomically the masked form of cholecystitis is essentially a disease of the gall bladder wall chiefly its inner layers. The location of the changes explains why at operation in which only the external surface of the organ is examined even advanced pathological changes are not discovered. Macroscopically the mucosa is thick but free from ulcerative processes.

Histological examination shows an exuberance of mucous glands, polypous thickening of the villi and such extensive changes in the mucosa that in certain areas the villi are entirely absent and the dense fibrous layer is covered only by a smooth layer of epithelium. The originally loose textured connective tissue has assumed a cicatricial character. As the result of recent irritation there is an inflammatory infiltration of leucocytes and lymphocytes. The microscopic findings are shown in photomicrographs.

On bacteriological examination microorganisms are never found but the histological findings show with certainty that the masked disease is based upon a bacterial cholecystitis.

The pathologically changed gall bladder is responsible also for other disturbances in the epigastrium. It constitutes an area of increased irritability which affects the surrounding tissues. An important role is played by the varying irritability of the sympathetic nervous system. To the organic trouble there may be added psychic disturbances.

Cholecystitis without stones is considerably more frequent than the purely functional gall bladder stasis. Very often the functional disturbance is the first manifestation of the changes in the gall bladder wall.

The treatment of the condition should at first be conservative—rest in bed, the local application of heat, dathermy, and a diet of easily digested foods. In the author's case the symptoms were often relieved by the use of cyclo-oxygen. If conservative treatment fails, the gall bladder should be removed.

SCHEUBERT (Z)

Dahl I. E. and F. Naf. Examinations in 196 Surgically Treated Cases of Biliary Lithiasis
(L. me. lité u. d. t. q. t. gt. ze. de l. th. bl. p.) 1. t. l. r. g. S. d.
9. 7. l. 9.

In the author's opinion, reports in the literature do not indicate that cholecystectomy is preferable to cholecystotomy for gall stones.

Re-examination of 196 patients treated for gall stones showed that the incidence of recurrence of symptoms due to refluxation of the stone or overlooked stones, cholangitis, or adhesions was frequent after cholecystectomy, after cholecystostomy.

Cholecystectomy does not increase the risk of ascending infection of the bile passages.

La Roche G. and Huot J. A. Common Duct Stenosis Realed by the Terra Iodophenol Phthalein Test in a Patient Who Had Been Subjected to Cholecystectomy (St. h. l. d. m. é. d. p. l'op. e. d. t. t. d. phé. l'ph. l. h. h. l. y. t. m. é.)
B. l. l. 5. d. d. l. p. d. p. 9. 7. l. 89.

The case reported was that of a patient thirty-four years old who had been subjected to cholecystectomy for cholelithiasis following numerous attacks of hepatic colic which were associated with jaundice but little or no fever. The operation was followed eighteen months later by upper abdominal epigastric subcutaneous chills, the passage of clay-colored stools and a slight fever lasting three days. Palpation of the epigastric duodenal region was distinctly painful. A tetra-iodophenol phthalein test made three weeks after the onset of the jaundice showed stenosis in the common duct.

The jaundice disappeared in five weeks and dietary treatment and the use of bismuth and antiseptics but occurred three months later. An exploratory laparotomy made fourteen hours after the administration of 4 gm. of sodium tetra-iodophenol phthalein in the fasting state revealed a shadow 3 cm. long by 1 cm. in diameter at the second lumbar vertebra. The stenosis in the common duct near its junction with the duodenum was revealed at once half an hour later, having only a uniform spot in the area.

In the authors' opinion, this as a case of biliary obstruction associated with dilatation of the common duct following cholecystectomy. There was no

evidence of pancreatitis. A roentgenogram made after the disappearance of the jaundice was negative.

Dilatation of the bile passages after cholecystectomy has been well established experimentally. Hautefort demonstrated that it occurs within from thirty-six to forty-eight hours after the removal of the gall bladder. Roth has shown that a few months after the operation cholecystectomized dogs may be divided into two groups: (1) those in which the pharynx of Oddi hypertrophies and the bile passages dilate into a reservoir for the bile which empties during digestion; (2) those in which the sphincter remains little dilated and the bile escapes continuously. The occurrence of dilatation of the bile passages after cholecystectomy depends upon the tonicity and resistance of the sphincter.

The frequency of dilatation of the extrahepatic bile duct in man has not yet been established. Leroche and Huot made tetra-iodophenol phthalein tests in fifteen patients from three to five years after cholecystectomy but failed to obtain a positive image. When dilatation is present the bile empties only during peristalsis. In the absence of tasis, no image of the bile ducts can be obtained.

W. L. R. C. BURKE, M.D.

Polacco E. T. Study of the Functional Condition of the Biliary Tract in Cases of Duodenal Ulcer by Means of Simple and Fractional Examination of the Duodenal Juice
(C. t. n. b. t. l. l. t. d. l. l. f. u. l. t. t. e. d. l. p. l. m. d. t. l. m. m. p. l. f. z. t. d. l. d. d. n. l.) 4. 1. t. i. d. 1. 927.

47

With the use of the Endo-n tube, I have made examinations of the gastric and duodenal juice in fourteen cases of peptic ulcer and thirty-two cases of disease of the biliary tract. The technique of the tubat on is described in detail. X-ray control is the only sure method of proving the presence of the end-piece of the tube.

In every case examinations were made during the fast, gastric and duodenal juice, the use of a modified Ewald test meal, Chologra, were avoided, they did not bring in any chemical condition.

A quantitative and qualitative study was made of the pancreatic enzyme—trypsin (pepsin) and amylase. The author is of the opinion that none of the three furnishes an adequate index of pancreatic function. The secretion of each seems to be dependent largely on the two others. No consistent parallelism was detected between the enzymes and disease groups, i.e., no secretory variation peculiar to gastroduodenal disorders or biliary diseases. On the other hand, the values of the three enzymes were directly influenced by the gastric acidity, regardless of the form of the disease. The latter observation confirms the findings of Poplski and Pal, who demonstrated that the production of acid to the duodenum will cause pancreatic secretion even after section of the vagus and pancreatic nerves.

Mr. A. G. E. L. E.

Cayla A The Test of Shock from Cold in Hemolytic Icterus (*L'épreuve du choc au froid dans les ictères hémolytiques*) *Presse méd* Par 1927 x xv 1152

In applying the test of the local cold bath suggested by Vidal for paroxysmal hemoglobinuria Cayla obtained the phenomenon of shock in two cases of hemolytic icterus one congenital and the other acquired. There were no apparent clinical signs but changes in the blood vessels and blood were noted—a decrease in the blood pressure a transitory leucopenia and the transitory appearance of albuminuria and urobilinuria.

In hemolytic icterus the findings of the various laboratory tests are far from being constant or the same even in a given case. Clinically there is found an entire intermediate series of conditions between hemolytic icterus and the *fruste* type of condition showing only fragility of the red blood cells. The fact that the cold test causes in the cases a transitory albuminuria analogous to that which is observed in paroxysmal hemoglobinuria indicates a relationship between the two conditions. Therefore it is possible to group the various conditions showing the phenomena of hemolysis under the term hemolytic disease as suggested by Chauffard.

The apparently well established fact that cold produces shock which is manifested by disturbances in the blood vessels and blood may perhaps explain many observations of general pathology. This shock is especially evident in paroxysmal hemoglobinuria Raynaud's disease and spasmodic coryza. So far it is possible only to speculate regarding the mechanism and sequence of the phenomena and it is impossible to say whether they are brought about by complex colloids acidosis or some other mechanism.

Although the occurrence of cold shock raises certain interesting problems regarding pathogenesis this test is not of great diagnostic interest in hemolytic icterus as it is more inconstant than the other biological reactions and occurs also in other affections. From the point of view of etiology it indicates biologically the influence which cold seems to exert in hemolytic icterus. But if cold whether by shock or by some other mechanism calls forth the hemolytic crises which are often latent but sometimes apparent it does so only in patients who are predisposed to the reaction and the cause of the predisposition is still unknown.

(R. CLIMONT) MICHAEL L. MASO M.D.

Muller G. P. The Indications for Splenectomy
Illus. M. J. 1927 xxvi 59

The author believes that splenectomy is very definitely indicated in some cases of pernicious anemia but just as definitely contra indicated in others. It should be done in early cases with active hemolysis. It should not be done in the cases of elderly patients.

In purpura hemorrhagica splenectomy should be done in the chronic cases. In the acute stages of the condition it is of no value. In the early period of the

disease all of the blood forming tissues are involved while in the later stages only the spleen seems to be affected.

Hemolytic ictero anemia must be differentiated from icteric conditions arising in the liver. Muller does not operate during the crisis. In the chronic cases his results have been very good.

In sickle cell anemia splenectomy is not of much value. Although in two cases the operation was followed by improvement the condition persisted.

In splenomyelogenous leukemia the mortality was at first about 87 per cent but in 1926 W. J. Mayo reported a series of cases with a mortality of 5 per cent. Muller believes that splenectomy is of value in the chronic cases but that radium and the X rays should always be used first. He has never known of a cure in this condition but in some instances the operation has been followed by definite improvement.

In Hodgkin's disease splenectomy is of no value.

With regard to the operation itself Muller emphasizes the importance of a good anesthetic good surgical technique and extreme care to prevent tearing of the thin walled veins with loss of blood. His incision is made in the left rectus with the upper end turned outward. He advocates multiple ligations of the pedicle and is very careful to see that all raw surfaces are covered since obstruction of the bowel may follow neglect of this precaution. Whenever possible he gives a transfusion both before and after the operation.

In conclusion Muller states that when a careful technique is used and the cases are carefully selected the mortality should be less than 10 per cent.

HERMAN O. MCHEETERS M.D.

MISCELLANEOUS

Macrae D. Jr. Acute Conditions of the Abdomen Complicated by Ileus or Septic Invasion of the Peritoneum *J. M. I.* 927 lxxxi 1113

Macrae is convinced that all inflammations or severe irritations of the peritoneum produce more or less severe symptoms of obstruction. He believes that obstruction rather than peritonitis is the cause of death in fatal cases in which peritonitis has developed. His extensive experience has led him to advocate the treatment of serious or doubtful cases by enterostomy or jejunostomy instead of peritoneal drainage which is the usual procedure when peritonitis is present.

The cause of death in intestinal obstruction has not been definitely established. Bacteremia perverted secretions dehydration and toxemia are considered important possibilities. Toxemia due to the absorption of poisons produced by bacterial action on the bowel fluids which accumulate in the intestine above the obstruction has been widely accepted as the most probable cause of death in such cases. *Bacillus welchii* has been demonstrated to be the organism which flourishes most abundantly in the secretions of an obstructed bowel. Williams

has had some success with the use of bacillus welchii antitoxin in cases of obstruction

Chemical changes in the blood in intestinal obstruction have been described by Orr and Haden. There is a rise in the non protein and urea nitrogen and a fall in the chloide content

In the light of his experience and present views concerning the cause of death in intestinal obstruction Macrae closes the abdomen without drainage following removal of the cause of infection. In the presence of a general peritoneal exudate he performs a jejunotomy. His technique for jejunotomy is described in detail. Gastric lavage before the operation and the administration of sodium chloride solution during or immediately after the operation are essential in all cases. The use of gastric bacillus antiserum is recommended.

M L L N T I M D

St. Id. n. R. F. Tl. Cont. ol. of Hiccup by Inhalation of Carbon Dioxide. J. J. M. I. 97

Shelton reports the results obtained from carbon dioxide inhalation in eleven cases of hiccup. In a case of lophothoracic pleuritic hiccup of eight days duration the hiccup was stopped by two live tests to test the minimum tracheal concentration of 15 per cent mixture of carbon dioxide and oxygen. The proportion of nitrogen was

In the case of the hiccup developed during the use of general anesthesia in four cases the general anesthesia was discontinued and the patient was placed in the prone position. In all the administration of fresh air 5 to 56 per cent carbon dioxide with oxygen was beneficial. In the case of the hiccup developed during general anesthesia the patient was placed in the prone position and the hiccup was stopped. A sufficient time of the alternate periods of rhythm.

M L L I T E M D

W. K. M. Inflammatory Diseases of the Diaphragm and the Associated Diaphragmatic Syndrome. (U. B. T. D. H. I. R. K. J. Z. R. H. L. D. D. D. T. B. B. C. I. T. J. D. Ph. G. M. L. S. M. P. T. K. M. P. I. X. I. J. J. K. I. C. I. 97. D. 89)

The diaphragm is practically never involved primarily. Most diaphragmatic contractions have their origin above the diaphragm in the pleura or lungs or below it in the abdominal cavity. Subdiaphragmatic space. The relationship of the involved dia-

phragm causes a definite syndrome. Acute diaphragmatitis frequently resembles acute peritonitis. It is first manifested by severe pain in a wide zone above and below the points of insertion of the diaphragm particularly in the region of the abdominal cavity which radiates back into the lumbar region. Corresponding to this spontaneous pain there is a diffuse tenderness to pressure. The most important sign is rigidity of the abdominal musculature which is diffuse and of great intensity particularly in the upper portion of the abdominal wall.

On light palpation of the abdomen is very painful but the sensitivity does not increase as in peritonitis where deep pressure is made.

Examination of the chest often reveals on the first day but more frequently on the second or third day a narrow strip of diminished resonance and shallow respiration over the lower lobe of the lung. This may be due to exudate alone but in the early stage of the condition is often caused by the high position of the diseased diaphragm. As the result of the inflammatory infiltration of the neoplasia of the diaphragm becomes paralyzed.

If the primary condition is diaphragmatic pleurisy this extends sooner or later to the costal pleura as it tends to allow of subdiaphragmatic inflammation. The findings of the thoracic examination in this condition are the primary condition.

A important additional sign of diaphragmatic disease is isolated hild pain (reflex action of the phrenic nerve on the other branches of the thoracic plexus).

The treatment of acute inflammation of the diaphragm usually includes the first few days but the definition of the abdominal muscles often persists for weeks although the pain soon ceases. Unlike the hild pain in peritonitis the pain is not rapid in its response to the normal red temperature. The use of common diaphragmatic function is likely to be beneficial in the recognition picture. The inflammatory process often spreads by continuity from right to left or vice versa.

In the author's forty-four cases the disease almost frequently is diagnosed as diaphragmatic origin. In only one case is it due to a subdiaphragmatic collection (abscess of the pleura).

Unlike the case of every acute peritonitis the diaphragm should be studied from the standpoint of the diaphragmatic involvement. Inflammation of the diaphragm is very common but is not generally recognized. JANSSEN (Z)

GYNECOLOGY

UTERUS

Miller C J The Modern Conception and Treatment of Uterine Fibroids *Ohio St Med J* 1917
vol 899

The author reviews the modern conception of the treatment of uterine fibroids and draws conclusions based upon thirty years of work among private patients and among the colored patients in the Charity Hospital of Louisiana. Fibroids were ten times more frequent in the latter group. In the white patients because of the average intelligent regard for health the tumors were usually small but in the majority of the negro group in whom treatment was delayed the growths were large often reaching to the costal margins. Degenerative changes of all types were common. Inflammatory conditions of the adnexa were found in 92 per cent of the colored women and in these cases pain from the adnexal disease rather than the fibroid compelled medical relief. At times tumors of very large size caused no symptoms whatsoever. Bleeding in the form of menorrhagia was the most frequent symptom. Leucorrhoea was common. Pain was due to associated adnexal pathology, pressure on surrounding organs or torsion and degeneration of the fibroid.

The author concludes that many small tumors are symptomless and require no treatment. However they should be checked up by pelvic examinations at definite intervals.

Radium therapy because of its simplicity, almost absolute freedom from mortality and morbidity and generally excellent results is an ideal procedure in properly selected cases. It is exclusively a method for the gynecologist rather than the radiologist or general surgeon for an accurate knowledge of the pelvic pathology is essential. In women under forty years of age in whom preservation of ovarian function is desirable radium is not advisable nor should it be employed to treat growths larger than a three to three and a half months pregnancy which cause pressure as it may not appreciably reduce the size of such tumors. Radium has little effect upon very dense fibroids or those undergoing calcareous degeneration. In the presence of adnexal disease its use is contra indicated as it may activate latent infections and thereby cause pyosalpinx and peritonitis. It may be followed by infection also when the fibroid has undergone degeneration. Degeneration is indicated almost invariably by anemia out of proportion to the hemorrhage.

The best results were obtained by Miller in the treatment of single or multiple intramural growths within the proper size limit. A preliminary curettage was done to establish the pathology and eliminate malignancy. Polypi which are prone to slough and

cause infection after the treatment were removed. The usual adequate dose was 50 mgm of radium inserted high up in the fundus for twenty four hours.

The author's experience with roentgen ray treatment was limited because radium had given him satisfaction.

Many tumors not suitable for radium were effectively treated by myomectomy which has its widest field in women of the child bearing age. However if pregnancy is impossible because of adnexal disease hysterectomy is a more rational procedure. Myomectomy is best adapted to the treatment of single subperitoneal or intramural growths. Menstruation returned to normal in from 80 to 90 per cent of cases. The tumors recurred in fewer than 3 per cent. The frequency of subsequent pregnancies following myomectomy makes the procedure valid from this standpoint alone. Certain points in technique must be emphasized. Hemostasis is essential. Tight sutures must be avoided or ischaemia and sloughing of the tissues will occur. A preliminary curettage should be done for diagnostic purposes and to secure drainage. Multiple growths are best removed by several incisions as these will cause less damage to the uterine musculature than a single large incision.

In the majority of the cases hysterectomy was the only rational or possible procedure as the size and multiplicity of the tumors and the frequent adnexal pathology contra indicate radiation or myomectomy. Hysterectomy is always indicated for adenomyomata and for large or multiple growths in women approaching the menopause. The complete operation should be done if the cervix is lacerated or infected. If the cervix is healthy supravaginal hysterectomy as performed by the average surgeon will have a lower mortality. Vaginal hysterectomy has a definite field in obese elderly women in whom postoperative complications or abdominal hernia are possibilities. The danger of thrombophlebitis after operation for large fibroids can be decreased by gentle handling of the tissues and limitation of the number of clamps employed. The success of fibroid surgery depends not only upon the skill and judgment of the operator but also upon the pre operative preparation of the patient. Nourishing food, rest, antiseptic douches and transfusions have a definite value in converting a poor surgical risk into a good one.

Fibroids associated with pregnancy require careful observation in the absence of complications. The surgical treatment indicated depends upon the size and location of the tumor and the duration of the pregnancy. Women with fibroids should be carefully watched during the puerperium for while this period is usually free from complications torsion, degeneration

cause has not been determined but the variation is evidently not related to the dosage vaginal bleed in, a developing hemorrhagic diathesis increased hemolysis or infection

After radiation treatments the leucocyte count was always diminished. In most of the cases the decrease persisted even three weeks after the radiation. The lymphocytes were most severely affected there being a true lymphopenia. None of the other forms of leucocytes (eosinophiles basophiles polynuclears or monocytes) showed such a constant variation. It was of interest to note that the first reaction directly following the radiation was a distinct and often very marked increase in the leucocytes. Frequenty this began even during the treatment. In nearly all of the few cases in which such an increase in the leucocytes failed to occur there were signs of some infection.

No pronounced or regular changes were observed in the blood platelet count. There was no thrombopenia.

The coagulation time also failed to show typical variations.

The sedimentation rate of the red blood cells showed an increase after the radiation in 86 per cent of the cases. This increase was considerable ranging from 21 to 85 per cent of the initial value. It did not seem to be dependent upon the dosage of radiation or upon infection. The diminution of the cell volume affected it to only a slight degree. The quantity of fibrin however had an unmistakable influence and seemed to run parallel with the sedimentation rate.

The author determined also whether these changes in the blood persisted in the later course of the disease and whether they were of significance as regards the prognosis. He concluded that in cases subsequently showing an increase in the hemoglobin and red cell count the prognosis is generally favorable whereas in those showing a decrease of these values it is unfavorable. However this rule has many exceptions. A decrease in the leucocyte count indicates a favorable prognosis as does also a decrease in the blood platelet count. A lengthening of the coagulation time must be regarded as a favorable sign. Rud places special value on the sedimentation rate. A decrease in this rate indicates healing and an increase indicates advancing carcinoma.

WAEGLI (G)

MISCELLANEOUS

Pohl, J. O. The Present Trend of Gynecology
Missouri Med. 1927, 22: 665

The author says that although disorders peculiar to women require just as keen an appreciation of basic pathology, physiological resistance and minute anatomy as do lesions of the eye or ear, many general surgeons do not hesitate to attack any gynecological problem whereas they would enlist the help of an expert in cases of cataract or sinus thrombosis.

Infections of the pelvis have usually a neisserian puerperal or operative origin and each infecting agent has a definite course of invasion—a selectivity for certain tissues. In the diseased part attempts are made by successive barriers to effect isolation and extermination of the pathological process. Surgical procedure in acute pelvic infection is limited to the drainage of localized purulent foci. Fifty per cent of the pelvic lesions of women have their origin in childbirth, three fifths of the remaining 50 per cent are the direct result of infection.

Gonorrhoeal infection. The initial symptoms of gonorrhoea are usually less acute in the female than in the male. Chronic gonorrhoea in women is capable of producing greater ravages and more permanent pathological changes than almost any other form of infection. Undisturbed cervical gonorrhoea remains localized and terminates in cystic cervicitis. Though the organism cannot be demonstrated on smears, active surgical treatment not infrequently spreads the infection through the endometrium into the tubes. The frequent exacerbations of chronic gonorrhoea are in reality re-infections from Skene's glands. A cure can be effected only by glandular destruction or ablation. Endocervicitis is a frequent cause of sterility yet cauterization or operative treatment of the cervix invariably cures the leucorrhoea or corrects the sterility.

Lacerations. Birth injuries produced by the midwife are due to submucous fascial stretching and muscle injury while injuries produced by the surgeon are open wounds. The immediate repair of the perineum and fascial layers is commendable although the immediate repair of a cervical tear may be accompanied by infection. Dilatation accomplished by time and intact membranes leaves little injury and appropriate postpartum care of the cervix will permit postponement of operative treatment for definite lesions until the woman has passed the child bearing period.

Fibroids. Many fibroids produce no symptoms but all fibroids need watching. The location and circulation of the neoplasms determine their fate and development. Whether the treatment shall be radiation, myomectomy or hysterectomy depends upon the requirements of the case under consideration. The contra-indications to radiation as outlined by Clark and Keene must be appreciated. Pre-operative treatment such as the administration of glucose, blood transfusions and rest will lessen the surgical risk and the postoperative administration of fluids, sugar and chlorides will aid convalescence.

Sterility. Of cases of primary sterility due to hypofunction, atrophy, infection, malformations or impotence the male is responsible in 30 per cent. In the female primary sterility is usually due to endocervicitis and tubal infection. If the cervix is normal and the Rubin test demonstrates patent tube, ovarian function and sexual response demand consideration.

Rotations. Both congenital and acquired rotations slowly but progressively lead to a chain

of complications which are directly attributable to interference with the venous circulation and uterine drainage. No single method of operation is ideal for different anatomical conditions requiring special procedures. The importance of the perisary in retaining the uterus in position after the removal of the placenta has been manually or postoperatively corrected should not be overlooked. In the authors' clinical postpartum construction has reduced the frequency of retrodisplacements from 38 to per cent.

Clinical. While the etiology of uterine carcinoma is unknown in certain clinical facts regarding the occurrence of cancer are definite and form the basis of treatment. Long continued irritation or infection predisposes to cancer. Cancer originates as a localized nodule or ulcer of the cervix and then totally confined to the cervix is cured by multiple diathermy of the cervix. The pathogenesis of the carcinoma of the cervix is the agent of choice. Cancer of the uterus is best treated by operation preceded by multiple diathermy.

A. E. F. MAX, M.D.

Peterson R. A. Review of 2000 Patients Recently Registered in the Gynecological Clinic of the University of Michigan Hospital with Special Reference to Abnormal Bleeding. *B. I. M. G. S. J.* 97, 64.

Practically one fourth of the 2000 women recently examined in the Gynecological Clinic of the University of Michigan Hospital had excessive uterine bleeding.

In the 3 patients all types of excessive flow occurred—menorrhagia, metrorrhagia, combination of the two and postmenopausal bleeding.

The hospital patients were divided into the following groups in accordance with the clinical history and the condition with which the bleeding was associated:

	N	P	t
Pregnancy	5	7	
Miscarriage	64	90	
Infertility			
pp	3	2	
Normal pregnancy		39	
Miscarriage with	4	3	
Miscarriage	4	49	
	3		

Unsuspected complete abortion, cervical malignancy, the menopause, and approach of menopause.

Malposition of the uterus, laceration of the cervix, the result of ectropion, erosion and leukorrhea are frequent causes of increased uterine flow.

These conditions are more frequent than formerly because of ill advised radical obstetrical procedure.

Inflammatory condition of the uterus and adnexa increased uterine flow in only a small proportion of cases (10 per cent).

Hyperæmia of the ovarian tissue has a role in increased bleeding.

Treatment should never be directed toward the interior of the uterus during the acute or chronic stage of an infection.

Nonmalignant pelvic growths are the most frequent cause of increased uterine flow.

The position, not the size of a benign growth in the uterus determines the amount of the increased flow.

Malignant uterine growths give rise to early and profuse uterine flow.

In every case of postmenopausal bleeding uterine cancer should be suspected. Microscopic examination of curettage in almost all cases of increased uterine bleeding is necessary if carcinoma is to be detected in the early stage.

Almost one fourth of cancer of the cervix occurs in women under forty years of age.

A study of the histories of patients with uterine cancer shows that the delayed diagnosis and treatment is due partly to ignorance of the part of the patient, the members of the medical profession are all partly responsible since they fail through lack of knowledge or carelessness to detect their patient's trouble.

With few exceptions every patient with abnormal uterine bleeding can be cured by a careful diagnosis made and if appropriate treatment is instituted.

GEORGE W. PHILLAN, M.D.

Koenig R. T. Uterine Discharge Frequency and Practical Importance of Menstruation Occurring Too Long Intervals and in Infrequent Quantities. (Uterine Discharge Frequency and Practical Importance of Menstruation Occurring Too Long Intervals and in Infrequent Quantities). *Z. f. Gyn.* 97, 189.

Koenig states that hypomenorrhea may be due to hypofunction of the ovaries but this does not exclude the possibility that it may cause disturbance in the secretory function of the ovary. This theory is simple and is better supported by the results of treatment than the theory of a disturbance of the ovary from other gland of internal secretion. Another theory which applies to many cases is that a decrease in the metabolism of the function of the vascular gland is responsible for the menstrual disturbances and disturbance in other organs.

It is noted frequently that women with hypomenorrhea suffer from very severe headaches, attacks of melancholia, depression, and even syncope. Neither the hypofunction of the ovaries nor the disturbance of the secretory function of the ovaries is a sufficient explanation of the disturbance. The disturbance can be explained in the symptom as well as the delayed ages by both the latter and physicians that menstrual secretion of blood has a cleansing action and any disturbance of this phenomenon has an unfavorable effect.

Of 4860 women whose cases were reviewed by Koenig, 432 suffered from hypomenorrhea and of

the latter 54 were amenorrhœic and 234 were op-
somenorrhœic (irregular menstruation at intervals
of from five weeks to three months) and 144 were
oligomenorrhœic. Koenig was therefore unable to
confirm the observation of Aschner and Latzko that
10 per cent of all patients suffer from infrequent or
scanty menstruation. Four hundred and one of his
patients had a tendency toward inflammation of the
bladder, kidneys and internal and external genital
organs. 394 had migraine and menopausal symptoms,
78 arthritic disturbances, 86 skin diseases, 64 goiter
and 12 psychic disturbances. Koenig obtained
good results from emmenagogues, sweating diuretics,
etc.

TELLNER (G)

**Steinhardt B. The Artificial Menopause (Ein
Beitrag zur Frage der kuenstlichen Menopause)
Ztsch f G b u r i s h u u G y n a e k 9 7 x c i 367**

The circulatory conditions and symptoms of the
artificial menopause occurring in women castrated by
the roentgen rays or operative removal of the
uterus and ovaries or of the uterus alone were studied
in 269 cases.

Of fifty-two women castrated by the roentgen rays
up to a year previous to the examination, the major-
ity of whom were over forty years of age, castration
symptoms were completely absent or only slight in
46 per cent, but in 54 per cent were more marked and
at times quite distressing. Psychic disturbances and
obesity were not observed. A slight increase in the
blood pressure was noted in four instances. In one-
fourth of the women the blood pressure was increased
before the irradiation, but did not increase further
after the treatment. Arterial hypertension is there-
fore not a sequela of castration. Moderate fluctua-
tions in the blood pressure were noted in 21 per cent
of the cases.

Of fifty-two cases in which the irradiation had been
done quite some time previously, the symptoms of
castration were slight in 23 per cent, but in 29 per
cent had been long continued since at the time of
their occurrence suitable treatment could not be
given.

The blood pressures of the irradiated women
showed no increase over those of non-irradiated
women of the same age, and it was impossible to
determine any parallelism between the increase in
the blood pressure and the severity of the castration
symptoms.

In thirty-nine women who were subjected to
hysterectomy it was found that excellent results
were obtained in the fifth decade of life. Younger
women had more or less pronounced symptoms which
often first appeared after from six to eighteen months.
One hundred and thirteen women subjected to total
extirpation of the uterus and ovaries were studied.
Of those who were over forty years old, 4 per cent
were absolutely free from symptoms and an almost
equal number had symptoms for only a few months.
In over 30 per cent of the cases, more severe and very
marked castration symptoms were noted for some
time.

The fact that the castration symptoms often do
not develop until several months after the surgical
or roentgen castration supports the assumption that
as the result of the loss of ovarian activity the tonus
of the sympathetic nerves slowly increases. It is
possible also that other endocrine glands take the
place of the ovaries for a while. Hypertonus was
never observed as the result of operation.

Of twenty-three women between thirty and forty
years of age, 14 per cent were free from symptoms
and about 25 per cent showed only slight symptoms.
The remainder complained of more or less severe
symptoms. Exceptionally severe symptoms occurred
in five cases, but even in these no effect upon the
blood pressure values was demonstrable.

With regard to the question of the blood pressure
due to myomata, 90 women with such tumors and
100 women of corresponding ages who were free
from myomata were examined. Of the former only
an inconsiderable proportion showed an increased
blood pressure. Three young women with primary
amenorrhœa were entirely free from symptoms.

On the basis of the findings of this comparison the
author discusses in detail the theories of Aschner. In
the main he rejects them. Truly serious sequelæ of
castration were never observed. The fact that among
thirty-five cases the first castration symptoms
appeared within the first two weeks in 35 per cent,
the fact that occasionally such disturbances appeared
only after from eight to nine months, and the fact
that after temporary castration the castration
symptoms often disappeared several weeks before
the recurrence of ovarian activity, speak distinctly
against the theory held by Aschner. Aschner's faulty
statistics may be explained by the fact that women
without symptoms do not consult physicians.

Castration symptoms are often very favorably
affected by weak irradiation of the pituitary region.
In the few cases that do not respond to this treat-
ment, weak irradiation of the thyroid gland is
beneficial. Venesection is indicated only in the rare
cases of failure of both of these measures. The
author agrees with Aschner that in the treatment of
gynecological conditions the measures used should
be as conservative of organs and function as possible.
Nevertheless there are many cases of climacteric
hemorrhages and bilateral adnexal tumors in which
roentgen treatment or total extirpation is the pro-
cedure of choice.

WINTER (G)

**Sampson J A. Peritoneal Endometriosis Due to
the Menstrual Dissemination of Endometrial
Tissue into the Peritoneal Cavity. Am J Obst
& Gyn 19 7 xi 422**

Menstrual blood escapes into the peritoneal cavity
from (1) endometrial cysts or cavities of the
ovary and possibly other pelvic structures which
have ruptured or perforated, (2) menstruating endo-
metrial tissue growing on the surface of the ovary
and other pelvic structures, (3) the uterine cavity
in a back flow through the tubes, and (4) men-
struating tubal mucosa.

Irrespective of its source menstrual blood at times contains bits of endometrial tissue set free by menstruation. Endometrial tissue is seminated by menstruation is sometimes alive and will continue to grow if it is transferred to situations in which its growth is possible. The peritoneum and surface of the ovary are suited to the growth of endometrial tissue.

The lesions of peritoneal endometritis often occur in situations and under conditions indicating at least suggesting their origin from menstrual blood escaping from the ovum.

The local action of the peritoneum to the endometrial tissue in peritoneal endometritis is similar to the local reaction of the peritoneum to cancer in peritoneal carcinosis.

I L C R M D

Curtis A. H. Indications for Surgical Intervention in Pelvic Lesions of Infectious Origin

Curtis emphasizes the importance of a search for infection of the duct system of the peritoneum. In cases in which the infection of the cervix is localized, it has been fully cured. The healing of cervicitis is the result of adequate drainage of the uterus. Full medical treatment is not in vogue. The cautious use of infrequent interval to prevent secondary infection and late sterility.

Chronic endometritis due to infection is rare; it occurs only after repeated instrumentation. The author therefore advises that hysterectomy after curettage be performed immediately or deferred until the inflammatory reaction subsides.

Gonorrheal inflammation of the adnexa is a self-limited disease. A bacteriologic study of 200 pairs of infected tubes failed to reveal the organism two weeks after the subsidence of the fever and leucocytosis. The treatment, conservative and highly successful if exposure to reinfection is avoided. In the author's cases operation is resorted to in less than 5 per cent of the cases and is done chiefly to relieve symptoms due to adhesions or prolonged bleeding incidental to inflammation of the ovaries. In contrast to the adhesions found in streptococcal infections, those in gonorrhea are easily separated. Rara areas should be covered with omental grafts. The ovaries should be conserved if possible.

Streptococcal infections of the tubes require systematic life treatment. Since streptococci often remain viable in the tube for a long period of time, the tubal and ovarian damage is more extensive and adhesions are more dense in streptococcal than gonococcal salpingitis. More radical peroperative measures are necessary for the relief of the tubal symptoms of infection due to streptococci.

S. MUEL A. W. L. F. M. D.

OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

Rissmann P. The Theory of an Icterus of Pregnancy and Operative Investigation (Operative Klarstellung über Annahme eines Schwangerschaftsicterus) *Zeitschrift für Chirurgie* 1927 li 2051

Icterus occurring in pregnancy is too often attributed to the pregnancy itself. Interruption of the pregnancy in cases of icterus is incorrect treatment. More often surgical intervention is indicated. Jaundiced pregnant women bear operation well and the fetus can withstand jaundice for a long period.

Rissmann reports a case of jaundice with severe abdominal colic in a para vi twenty seven years of age. In this case a characteristic abdominal rigidity led to puncture of the cul de sac of Douglas. The puncture yielded a greenish yellow fluid from which bacillus paratyphosus was cultured. Later the same organism was found in the blood.

At operation all of the organs of the abdominal cavity were found to be covered by a greenish yellow secretion. The patient recovered and five months later gave birth to a full term infant.

Also cited is the case of a pregnant woman with icterus of four months duration in which a gall stone was removed from the papilla of Vater and two and a half months later a full term infant was born.

It has not yet been definitely established that pregnancy causes an idiopathic icterus. According to the internists the toxic and infectious traumata which cause icterus come from the bowel contents. The pancreas also may be the source of attacks of pain and jaundice. The pancreas seems to be quite frequently affected in pregnancy. The author reports the case of a twenty four year old woman in the third month of pregnancy who was admitted to the hospital with a history of apathy, vomiting of four days duration and marked icterus. The urine showed acetone, bilirubin, albumin and hyaline casts. After the daily administration of 60 to 50 and 30 units of insulin and 1 liter of 4 per cent glucose solution by proctoclysis the acetone disappeared from the urine in two days, the icterus disappeared from the sclera in three days and the patient was discharged cured after eighteen days.

In the author's opinion the term recurring icterus of pregnancy should be dropped from obstetrical literature since thus far no proved case has been observed. WORTSMAN (Z)

Schumann E. A. Observations upon the Coexistence of Carcinoma of the Fundus Uteri and Pregnancy. *Am J Obst & Gynec* 1927 xiv 573

The patient whose case is reported complained of uterine bleeding and backache. She had had ten normal labors and no miscarriages. Her youngest child was two years of age. Her last menstrual pe-

riod had begun twenty days before her admission to the hospital and had continued intermittently ever since alternating with a thin serous discharge. She had some pain in the back which did not radiate and pain also in the lower abdomen. The vaginal outlet was multiparous, the perineum relaxed, the cervix hard dense and without laceration and the uterus large, boggy, movable and forward in good position. A gentle curettage was performed and ten days later a panhysterectomy was done.

When the uterus was sectioned it was found to contain a normal two and one half months embryo. The sac was unruptured. Just under the lower border of the sac there was a grayish necrotic area about 6 cm in diameter which was limited to the mucosa and somewhat circumscribed. This area did not extend under the placenta and was not elevated above the surface nor especially vascular. It was at all points at least 3 cm above the internal os and had no connection with the latter.

The pathological diagnosis was adenocarcinoma. A critical examination of many sections revealed certain characteristics which were peculiar to the growth. There were present a normal decidua, a normal placenta and a fetus. The stroma reaction was pronounced with many large decidual cells and cell islets. The glands were reduplicated showing marked hyperplasia but throughout there was a breaking through of the limiting membrane with massing of the epithelial cells outside the confines of the glands which formed the typical rain worm like convolutions and markedly irregular mitotic figures. The tumor was entirely extraplacental which is usually not true of chorio epithelioma and there was no evidence of a second placenta from a twin pregnancy. E. L. CORNELL M.D.

Ikeda K. The Etiology and Pathogenesis of the Leucocytic Infiltration of the Human Placenta (Über Aetiologie und Pathogenese der Leukocyteninfiltration in der menschlichen Placenta) *Beitr path Anat u allg Path* 1927 lxxiii 16

In the first part of this article the author discusses the localization and causes of leucocytic diapedesis in the placenta. In his study of the condition he examined fifty two placentae without any special selection of cases. At the site of insertion of the umbilical cord and at the middle and marginal portions of the placenta the oxidase test of Graeff was carried out and hæmatoxylin eosine and cresyl violet stained sections were made. As a result of his investigations the author draws the following conclusions:

1. Diapedesis of leucocytes at the juncture of the umbilical cord and placenta as well as in the chorionic membrane of the placenta does not depend upon the

duration of labor nor upon the strength of the contractions of the uterine musculature

2 Transmigration of leucocytes into the placenta occurs very frequently in stillbirths and forceps deliveries

3 It takes place also in pregnancies running a normal course

4 It is found much more often at the junction of the umbilical cord and placenta than at a distance from it in the chorionic membrane

5 It is not specific for syphilis

The second part of the article deals with the nervous or chemical causes of leucocytic diapedesis and the nervous sensitivity of the placental blood vessel. Perfusion experiments on human placental vessels the mechanism of which is described in detail and histological studies on the placental vessels were carried out. From a critical review of his findings the author concludes that the fetal blood vessels of the placenta possess no nerve elements and that the diapedesis of leucocytes takes place without any nervous influence and is a reaction to a chemico-physical stimulation in the sense of Graef.

In the third part of the article Ikeda reports on experiments carried out on animal to determine whether the blood vessels of the chorion and the placenta possess nerve fibers and whether leucocytic infiltration of the placenta can be produced artificially.

The experimental animals were guinea pigs in a late stage of pregnancy. The experiments were conducted with emulsions of bacteria as well as dilute acid and alkaline solutions.

The experiments with the bacterial emulsions showed that transmigration of leucocytes in the subchorionic area and at the junction of the umbilical cord and placenta may be produced artificially by the injection of a bacterial emulsion into the amniotic fluid and that a marked accumulation of leucocytes occurs at the site where the bacteria become localized.

The other experiments showed that after the injection of dilute solutions of alkali or acid into the amniotic fluid in the case of young fetuses the maternal leucocytes become deposited to ward the amniotic fluid in the peripheral intervillous spaces and appear to a varying degree in the wall of the chorion. In the cases of older fetuses there is also a transmigration of leucocytes from the fetal blood vessels at the junction of the umbilical cord and placenta.

The author concludes that in cases in which syphilitic and other infection can be excluded the leucocytic infiltration in the chorion is frequently encountered is to be attributed to a physicochemical change in the amniotic fluid. It is impossible to say to what extent this is dependent upon nutrition or other factors.

SCHELMER (G)

Davidson H S Therapeutic Abortion with Special Reference to Methods of Induction Ed
by M J 1917 Ed by G H Obit So 85

Davidson considers that hyperemesis is the most important indication for the induction of abortion

because it has been the chief indication in the greatest number of cases both in his hospital practice and his private work. The rule by which he is guided in this connection is that if either the temperature or the pulse is over 100 for forty-eight hours the pregnancy is to be terminated. Jaundice is the other clinical sign of importance in judging the severity of the condition.

Mitral stenosis is also regarded as an indication for abortion in certain cases. At term cesarean section with sterilization of the patient is performed.

Other indications given are active phthisis, certain renal conditions with albuminuria, hydatid mole, erythremias and certain mental afflictions.

The method employed are divided into the slow and the rapid method. The former are used when there is no urgency and the latter when the patient's life is endangered. In the slow method dilatation is accomplished of the uterus with gauze either with or without destruction of the ovum by means of polyethylene is the simplest procedure. Tents are occasionally used.

Of the rapid methods the author favors vaginal hysterectomy and occasionally abdominal hysterectomy. The other rapid method mentioned is abdominal hysteromy. This is indicated when sterilization is to be performed after the excision of a degenerating fibroid when the patient is practically certain to abort and when a hydatid mole is present.

H VERNON SMITH M D

McQueen J D Hemorrhage in Pregnancy
Causes 15 97 85

McQueen discusses the types of bleeding in pregnancy, namely the bleeding associated with abortion, accidental hemorrhage and the placental due to placenta previa.

Abortion is discussed only briefly with emphasis on the importance of a glance to the patient early in pregnancy and the limitation of vaginal treatment.

Of the occasional cases of pregnancy admitted to the Winnipeg General Hospital a diagnosis of accidental hemorrhage was made in nine. In this group there are no maternal deaths. The pathological and clinical pictures and the theories of a crisis in the condition to toxemia and torsion of the uterus function as disturbances of the uteroplacental circulation and trauma are briefly reviewed.

In the treatment the aim should be to combat shock, empty the uterus and stop the hemorrhage by the administration of morphine, the application of a tight binder, the intravenous injection of fluid and transfusion. In severe cases cesarean section with or without hysterectomy may be necessary. This should always be preceded by blood transfusion. Tamponade and version are not indicated.

Placenta previa may be classified as complete, incomplete and implantation. Its presence is suggested by hemorrhage occurring in the last three months of pregnancy. For a positive diagnosis a vaginal examination is necessary.

The treatment must be carried out in a hospital and must depend upon the general condition of the patient previous interference the condition of the cervix the period of gestation and the situation of the placenta. Rapid manual or mechanical dilatation of the cervix and rapid delivery of the child by forceps the administration of pituitrin or breech extraction are to be condemned.

In the 2 000 cases of pregnancy referred to placenta previa occurred sixteen times. One patient with this condition died a few minutes after her admission to the hospital. The fifteen others survived and three of them gave birth to living infants. In nine cases the treatment consisted in tamponade and version. The author agrees with Watson and Miller that conservative treatment or caesarean section is the procedure of choice.

DONALD G. TOLLEFSON M.D.

Cruikshank J. N. Acute Endocarditis in Pregnancy and the Puerperium. Notes on Eleven Autopsies. *Glasgow M J* 1927 c 111 279

In a series of 160 consecutive postmortem examinations of women who died during pregnancy or the puerperium acute endocarditis was found in 11 cases. In 5 cases the endocarditis was of the ulcerative type in 6 cases of the simple type.

In 2 cases it was simply the terminal event in some other illness in 4 it was secondary to infection elsewhere in 2 it was of the rheumatic type and in 2 it developed at the end of a period of cardiac failure due to a previous attack of endocarditis.

Puerperal sepsis appeared to be the direct cause of the acute endocarditis in only 3 cases.

Infarctions were found in 7 of the 11 cases. In 4 cases of the brain was present in 4 cases of the lung in 3 of the kidney in 3 and of the spleen in 1 case.

Splenic enlargement was present in 8 cases but was extreme in none.

Fever amounting to hyperpyrexia had been present in 2 cases. In 6 there was fever of moderate degree while in 3 there was little or no disturbance of temperature.

In conclusion the author states that these post mortem examinations demonstrate the importance of sepsis both uterine and extra uterine in the causation of acute endocarditis in pregnancy and the puerperium particularly when the endocardium has already been damaged.

CARL H. DAVIS M.D.

Newell F. S. The Treatment of Cardiac Complications of Pregnancy and Labor. *Boston M & S J* 1927 cxc 11 757

Newell stresses the great need for specialists in obstetrical cardiology.

Ten per cent of all women develop murmurs during pregnancy but in the vast majority of cases all signs and symptoms of cardiac impairment disappear later. In approximately 2 per cent of all pregnant women a definite cardiac lesion is present and in one half of these cases the patient's future

depends upon the care which she receives during pregnancy.

Congenital heart disease of a severe nature is comparatively rare. Mitral stenosis is the most serious lesion. Aortic lesions are less serious while uncomplicated mitral insufficiency is of almost negligible importance.

Patients with cardiac disease may be divided into three groups (1) moderately and extremely severe cardiacs (2) mild cardiacs and (3) possible cardiacs.

Those in the third group should be watched very carefully. Those in Group 2 who have had a single attack of rheumatic heart infection but in whom the cardiac muscle is but slightly affected should be carefully watched and instructed to avoid exertion. In this group repeated pregnancies are relatively safe.

Patients in Group 1 have a definite mitral stenosis or aortic lesion and heart muscle damage. It may be possible to carry a patient of this type through one or more pregnancies but cardiac invalidism may be the price paid. If the patient is seen before the fetus is viable abdominal abortion with sterilization should be performed. When the fetus is viable the patient should be carried to near term and caesarean section and sterilization then performed.

HAMILTON in discussing the paper pointed out that 95 per cent of the patients in Group 1 have mitral stenosis while only 1 or 1 1/2 per cent of all pregnant women have this lesion. Nevertheless 20 per cent of all maternal deaths at the Boston Lying In Hospital and 28 per cent of all maternal deaths in the Faulkner Hospital were derived from this group. In the first two years of the Heart Clinic there were 68 cardiacs of Group 1 with a maternal mortality of 17.7 per cent whereas during the last three years there have been 133 patients of this type with a maternal mortality of 3.8 per cent. During the same period the infant mortality was reduced from 26.5 to 19.9 per cent. This improvement was due entirely to the intelligent care given the patients by the obstetrical cardiologists.

GEORGE W. PHILLAN M.D.

LABOR AND ITS COMPLICATIONS

Gordon C. A. Respiratory Emphysema in Labor. *Am J Obst & Gyn* 1927 iv 633

The occurrence of air in the subcutaneous tissues is an unusual and interesting complication of labor—a phenomenon probably occurring more often than has been recorded in the literature and of interest because of its sudden onset and our lack of positive knowledge regarding its etiology and pathology.

The author reports two cases in primiparae. In one case the emphysema occurred in the first stage of labor and in the other in the second stage.

I. I. COPNELL M.D.

Wosher G. G. Caesarean Section Indication and Limitations. *S g Gynec & Obst* 1927 xiv 65

The main points made in this article may be summarized as follows:

1 A Baudelocque diameter of less than 17 cm and a true conjugate of 6 cm or a tumor blocking the outlet is a positive indication for cesarean section

Seventy five per cent of all pelvic contractions allow delivery by the natural passage

3 The classical conservative or Saenger operation done when indicated by electrical means is comparatively safe. The maternal mortality should not exceed 1 per cent

4 The maternal mortality is increased by rupture of the membrane attempts at forceps delivery the induction of labor by cesareanotomy or the frequent amniotomies per age preparation to the section. After any of these cesareanotomies should be selected in the interest of the mother's life. If section is done after a potential infection it must be a Porro or a low traperitoneal operation

5 In eclampsia the indication for cesarean section is limited to the cases of primipara with a rigid long unyielding cervix who show no improvement following six hours of continuous treatment

6 Placenta praevia is most generally an indication for the ruber's bag in luction the exception being severe bleeding with no dilatation in a previous central

7 The fetal mortality is to be reckoned according to whether the section is demanded by pelvic dystocia or by maternal diabetes. Under the former condition a minimal death rate for the infant may be predicted whereas under the latter condition the risk to the child from hemorrhage toxemia or prematurity is necessarily vastly augmented

Finally the dictum for cesarean section when the head has reached uterine cavity will be effective depends on prenatal cause and the obstetrical conscience

C H D S M D

Rucker M P The Treatment of Contracted Pelvis on Rong Dy to a with Adrenalin 4 J Ob G 97 69

The author reports to cases in which a contraction ring causing uterine contraction is relaxed by a hypodermic injection of 5 minims of a 1:100 solution of adrenalin. In most cases such an action causes a cessation of uterine contraction that can be shown graphically and a relaxation of Bandl's ring that can be felt with the hand. The uterus in no case has Rucker noted a motor effect. The cases in which the effect was no effect at all on how no effect at all. This result is probably explained by the occurrence at the point of injection of a local action which delayed the absorption

F L C E L M D

Schumacher P The Mechanism of Labor in the Contracted Pelvis IV The Transversely Contracted Pelvis (D G b t m h m b e m g B k IV D q e e g t e B c k) A h f G j k 97 59

This article one of a series on the mechanism of labor in the contracted pelvis reports upon experimental

investigations regarding the mechanism of labor in the transversely contracted pelvis

When the transverse contraction is slight the infant's head enters the pelvis according to the mechanism of the normal pelvis. The walls of the transversely contracted pelvis which converge downward exert an influence upon the mechanism of labor only when the degree and the form of the increasing contraction of the pelvis interfere with the normal changes in presentation and position of the descending head. The fetal head may be turned with it against suture in the longitudinal diameter before it is turned by the knee of the birth canal

When the spines of the ischium are very prominent the head may encounter additional resistance at the level but in most cases this can be overcome with the aid of the sagittal synclitism. The development of this sagittal synclitism is explained according to the mechanics of labor and is shown in two illustrations

Attention is called to the importance of the mechanics of labor of the not uncommon striking mobility of the articulations of the hypophyseal funnel pelvis. When the fetal head enters the pelvic inlet

the occiput directed rather posteriorly it may still rotate with its occiput anteriorly in the upper portion of the pelvic cavity if the transverse contraction is not marked. But the farther the head descends into the pelvis the more difficult this becomes ultimately it is entirely possible. The head is then presented by the more closely approach of the pelvic wall from making any change in position. In such cases labor takes place according to the mechanism of a frontal or an occiput posterior presentation which endangers the perineum to an even greater extent than the occiput anterior presentation because the pubic arch of the transversely contracted pelvis is usually so narrow and pointed that even the less bulky sacrum has no room in it and therefore the bulky occiput exerts great force against the soft parts of the pelvic floor

More marked transverse contraction may affect the presentation and position of the advancing fetal head even in the pelvic inlet. It may turn the long front occipital diameter to the longitudinal diameter in accordance with the slope of resistance of the pelvic inlet

SCHEM C E (G)

F d F C Clinic I S gn of Pel I Di t ess Du ng L bor I J Ob G 97 659

The fetal heart sounds since they are transmitted directly from the fetal heart are usually the first hand information as to the condition of the fetus. Careful auscultation is obligatory and should be done from early in labor until the child is born. It is especially necessary in the cases of elderly primiparae women with a questionable pelvic cases in which there are frequent strong contractions, cases in which the fetal membranes have ruptured prematurely and cases of breech presentation

A fetal heart beat remaining below 100 between pains is a sign of distress calling for extremely careful

observation and investigation or the termination of labor if this can be done with safety to the mother.

A funic souffle persistently heard usually indicates that the cord is around the neck or that there is pressure on the cord. It is therefore extremely important as it indicates possible danger to the fetus.

The appearance of meconium is not *per se* of the vital importance that some obstetricians suppose but when it is associated with slowing of the fetal heart interference is indicated.

Neither a rapid fetal heart nor a fetal heart that varies provided the variation is within the usual normal range is of serious importance in the majority of cases.

Occasionally however a child may be born dead without previous warning from the fetal heart of the impending asphyxia even when careful observation has been continued throughout labor. Such deaths are usually due to some form of cerebral injury involving the respiratory center.

Syphilis has not been found to be a factor in influencing the rate of the fetal heart during labor.

A small pelvis early rupture of the membranes and frequent strong uterine contractions have a marked effect in slowing the fetal heart.

Prolongation of the first stage of labor influences the heart rate of the fetus very little but prolongation of the second stage has a more marked effect.

In the discussion DAVIS stated that the paper did not sufficiently stress the importance of irregularity of the fetal heart beat.

PREIFFER did not agree that the meconium is to be disregarded in cephalic presentation. He is of the opinion that the infant is at least partially asphyxiated in such cases. E. L. CORNELL M.D.

PUERPERIUM AND ITS COMPLICATIONS

Findley P. Puerperal Inversion of the Uterus
14 J S g 1927 III 452

Two cases of complete puerperal inversion of the uterus were operated upon by the author. In both the condition occurred in a primipara and followed forcible expression of the placenta. One patient died from shock and hemorrhage at operation but the other who was operated upon on the twelfth day of the puerperium recovered.

Findley states that partial inversion of the puerperal uterus is of common occurrence often unrecognized and self rectifying.

Complete inversion on the other hand is one of the rarest of obstetrical mishaps. In 1932 164 labors it occurred only 17 times or once in 113 063 labors. It is most common in home deliveries.

The forcible Crede maneuver and traction on the cord produce inversion only when the fundus is relaxed and the lower uterine segment is flaccid.

An unrecognized partial inversion may be made complete by an increase in the intra abdominal pressure due to coughing or straining at stool.

Approximately one third of all cases of uterine inversion pass into the chronic stage thirty or more

days after labor. In two thirds of all cases the placenta is adherent. Inversion may occur without collapse or hemorrhage. The mortality ranges from 14 to 26 per cent.

In the treatment it is of importance first to control the hemorrhage and relieve the shock. A blanched patient is a poor surgical risk. When efforts to control the hemorrhage and relieve the shock are unsuccessful the attempt should be made to replace the fundus. If this procedure fails the fundus should be amputated. An infected uterus should be removed. DONALD G. TOLLESON M.D.

MISCELLANEOUS

Kosmak G. W. Fundamental Training for Obstetrical Nurses. Surg Gynec & Obst 9 1915 665

In proposing a condensed syllabus of theoretical and practical teaching Kosmak says The set period of thirty hours as a minimum has been adhered to although neither the lectures nor the demonstrations may take up the full number. This will afford time for review lectures and for quizzes on the practical demonstrations. The textbooks on obstetrical nursing which have been thus far recommended should be either supplemented by simpler editions or subjected to revision in which the essentials treated in the lectures are noted and stressed. Moreover it is of great importance that medical men lecturing to nurses on obstetrics be thoroughly instructed as to the character and purpose of their lectures that such lectures be given by the attending staff preferably the seniors rather than by the resident internes.

Anatomy as related to obstetrics. Bony pelvis—general structure integral part of birth canal in fluence of labor. Organs of generation—uterus ovaries tubes vagina vulva. Relations of vagina rectum and bladder. Breasts. Elementary physiology.

Physiology of reproduction and pregnancy. Menstrual life puberty to menopause. Embryonic development impregnated ovum to full term fetus. Fetal membranes liquor amni placenta cord. Relation of mother to fetus maternal impressions.

Necessity of prenatal care. Hygiene of pregnancy diet clothing exercise.

Pathology of pregnancy. Nausea and vomiting—degree treatment. Interruptions of pregnancy abortion and premature labor accidental hemorrhage placenta praevia etc. Intercurrent diseases heart lungs kidneys exanthemata gripe.

Toxemia early and late. Causes variate treatment.

Labor. General features stages pains mechanism presentation progress delivery of baby and placenta. Analgesia anesthetics.

Puerperal period. Involution of uterus lochia care of breasts subinvolution pyelitis phlebitis puerperal mania sepsis.

Complications Prolapsed cord or extremity hemorrhage precipitate labor Operations—forceps version cesarean section induction of labor perineal and cervical repair

Verbo n fant Care feeding intercurrent diseases premature infants

Qu

Practical demonstrations Each of these should be extended through two hours and be followed by a quiz

- 1 Anatomy 2 Hygiene of normal pregnancy
- 3 Care of abnormal pregnancy 4 Preparations for labor normal
- 5 Preparations for labor abnormal
- 6 Puerperal case in normal case 7 Care of puerperium abnormal
- 8 Complications of pregnancy
- 9 Care of toxemias 10 Care of newborn

C. R. H. D. S. M. D.

Yamamoto T. The Effects of the Roentgen Ray on the Development of the Embryo of the Human Fetus. *J. J. Obst. Gynec.*

In these experiments reported both x-ray irradiation (one sixteenth of the erythema dose) and strong irradiation (four thirds of the erythema dose) were employed. Incubation in the hen was used.

When the eggs were exposed to either the weak or the strong irradiation prior to incubation no influence was exerted upon the development of the

embryo. The weaker irradiation failed to exert an influence also during the early period of incubation.

In a study of the effect on eggs at different stages of development the author employed a full dose of rays of medium wave length and a full dose of rays of short wave length. He found the injurious effect to be greatest when the irradiation was given just after the thirty-second hour of incubation. After the two hundred and forty-first hour no demonstrable injury was produced. When rays of the longer wavelengths were used the resulting anomalies were confined to the lower limb and in general the injurious effects were somewhat less. However the results indicate that the amount of damage was determined by the degree of development of the embryo rather than by the character of the rays. The fractional application of the same dose produced less markedly injurious effects.

Finally the chickens which stood the influence of irradiation and which hatched naturally were reared and the influence of irradiation on their reproductive power and the incubation of eggs fertilized or laid by them was studied. These chickens began to lay eggs in the seventh month after incubation as did the controls and showed no abnormalities in the development of secondary sexual characteristics. The incubation of their eggs was also normal.

CHARLES H. HEACOCK, M.D.

GENITO-URINARY SURGERY

ADRENAL KIDNEY AND URETER

Brofeldt S. A. The Etiology and Clinical Aspects of Perinephritic Abscesses (Zur Ätiologie und Klinik der perinephritischen Abszesse) Acta Soc. Fennica Duodecim 1917 VII No 10

In cases of chronic suppurative nephritis inflammatory processes of a hyperplastic nature are often found in the renal capsule and the surrounding fatty capsule at operation or autopsy. In comparison with the great frequency of various kinds of suppurative nephritis fully developed inflammations of a suppurative nature in the region of the kidney are relatively rare. With regard to the etiology and clinical picture of such inflammations there are still many unsolved problems.

As these inflammatory processes differ widely in their etiology being alike only in their localization near the kidney there has been no agreement in the nomenclature applied to them. Rayer called them simply perinephritic abscesses but Gerota finding that the retroperitoneal tissue surrounding the kidney is separated from the rest of the retroperitoneal tissue by the renal fascia attempted to give special names to inflammatory processes within and outside of the renal fascia. Kuester and others designated inflammation of the fatty capsule paranephritis. Israel who reserved the term perinephritis for inflammation of the fibrous capsule applied the term epinephritis to suppurative inflammations of the fatty capsule but found no followers. Rehn and nearly all American urologists use the term perinephritis only for inflammation of the renal fat and the term paranephritis for inflammation of the pararenal adipose tissue lying outside the renal fascia. The author regards the latter nomenclature as the most practical although it is not always possible to differentiate the various forms of abscesses clinically and therefore inflammations localized both within and outside of the renal fat are called perinephritic abscesses.

The author's material consisted of forty seven cases of perinephritic abscess from the University Surgical Clinic of Helsingfors. Thirty of the patients were males. According to statistics perinephritic abscesses occur about twice as frequently in males as in females. The majority of the patients whose cases are reviewed were between twenty and forty years of age but some of them were under twenty years and others under ten years of age. Two were children two years old. The abscess developed on the right side in twenty four cases on the left side in twenty two cases and on both sides in one case. According to the cases reported in the literature the right and left sides are affected with equal frequency.

PRIMARY PERINEPHRITIS

Suppurative inflammatory processes may develop in the fatty capsule either primarily or secondarily from infectious processes in near by organs. The primary type include also suppurations produced by gunshot or stab wounds and dull force.

The part played by dull force in the etiology of perinephritic suppurations has been variously estimated. Earlier investigators regarded it as of great importance and attributed to it the more frequent occurrence of such suppurations in males. Experience has shown that the bacteria which often reach the blood stream in surgical infections seem to cause suppurative processes only when they reach injured tissues. This observation provides a certain basis for the theory that the infection of the fatty capsule occurs directly from the blood stream without participation of the kidney. On the other hand those who consider infection from the kidney to be the rule or at least the more common occurrence are able to explain the development of perinephritic suppuration in the absence of trauma. In the cases reviewed there were only four in which trauma could be blamed. In certain cases trauma may favor the rupture of a renal focus into the fatty capsule but primary suppurations of the fatty capsule due to an injury seem to be extremely rare if they occur at all.

A primary metastatic origin of abscesses in the fatty capsule without a previous trauma has also been suggested as possible but the experiments upon which this theory was based were carried out on rabbits which do not have a distinct fatty capsule and abscesses were formed not only in the cortical layer but also in the fibrous capsule. Moreover the fibrous capsule in rabbits differs in its structure and vascular system from the fibrous capsule in man.

At operation on perinephritic abscesses the surface of the kidney is occasionally found intact but this does not necessarily mean that the suppuration was primary in the fatty capsule the renal focus may have become healed before the operation. In general it is contrary to all surgical experience to assume that a primary perinephritis can develop by way of the blood stream. A metastatic abscess is more apt to be formed in the sensitive renal tissue than in the fatty capsule the resistance of which is much like that of the great omentum.

It has been suggested also that the fatty capsule of the kidney may become infected by way of the lymph stream. According to Miller infection of the fatty capsule by way of the lymph vessels in inflammations of the bladder and genitalia is theoretically possible since not only the bladder and the region of the genital organs but also the lymph vessels of the kidneys and their capsules communicate with the lateral lumbar lymph glands. The

perinephritic suppurations occurring after labor have also been attributed to lymphogenous infection. According to Cumston the development of infection of the fatty capsule in the first weeks after delivery indicates an infection by the lymphatic route but experience has shown that it is typical of a hæmatogenous infection. Even if it is admitted that infection on may occasionally ascend to ward the lateral lymph glands the latter form a strong barrier which infection can rarely overcome. On the other hand it must not be forgotten that during or after labor the infecting agents may easily reach the blood stream by way of the large wound surfaces.

According to another the renal fatty capsule may become infected by way of the lymph stream from inflammations of the abdominal viscera. According to the nearest notions of Franke at least a slight network of lymph vessels leads from the colon to the renal capsule. However, most of the lymph vessels end in the mesolumbal gland which have no communication with the kidneys.

Finally it has been claimed that an infection may reach the fatty capsule from the thoracic viscera by way of the lymph stream but in the author's opinion the reverse is more likely.

Brosfeldt concludes that primary suppurations of the fatty capsule occur by way of either the blood or the lymph stream and that in not a single case of the disease was such a possibility likely.

SECONDARY PERINEPHRITIS

Among the secondary perinephritic abscesses are also included all suppurations of the fatty capsule which arise from infectious processes in the organs and tissue surrounding the renal capsule. In such cases the infectious process first produces a retroperitoneal phlegmon and then latter ruptures into the fatty capsule. As the symptoms of the primary inflammatory process often limit the clinical picture such cases are excluded from this discussion.

The part played by the kidneys in the etiology of perinephritic abscesses is exceedingly important and in chronic nephritis fully recognized.

A relatively large percentage of all perinephritic abscesses are upurated or produced by chronic nephritis. In the author's material the perinephritis was due to pyonephrosis in six cases, to calculus in four cases, to tuberculosis in one case. In the literature chronic pyelonephritis is often given as a cause of perinephritic abscesses and theoretically it is possible that the secondary cortical abscesses bring it about after direct uptake of the fibrous capsule or by way of the lymph stream following permeation of the capsule. But neither in his own material nor in the literature has the author been able to find any case supporting such an assumption. Practically only the chronic form of renal suppuration which produces pyonephrosis, the calculus, a pyonephrosis can cause perinephritic abscesses. As renal stones very often cause infection or pyonephrosis they are frequently the primary factor in perinephritis.

The theory that acute hæmatogenous infections of the kidney are of importance in the etiology of perinephritic abscesses has lost considerable ground.

As the nature of the condition in perinephritic abscess often does not necessitate exposure and careful inspection of the kidney the point of origin of the perinephritic abscess frequently remains undetermined. Therefore the question arises as to whether it is possible to determine from the clinical symptoms alone when a perinephritic abscess has had its origin in the kidney and whether in these cases it is possible to distinguish a possible renal abscess aside from the suppuration in the fatty capsule.

According to the author's experience tenderness and tension in the lumbar region depend more upon the intensity of the renal process than upon its nature and tenderness on palpation and percussion is found also in other renal infections as well as in a cortical abscess of the kidney. Therefore it is difficult to draw conclusions as to the etiology of the perinephritis from these findings alone.

The changes in the urine in perinephritis are frequently very slight and the urine is often macroscopically clear. However, on the basis of the cases reviewed it may be said that on careful examination of the urine usually shows erythrocytes and leucocytes in the initial stages and later chiefly leucocytes. Albumin is also often demonstrable.

With regard to the bacteriological examination of the urine in cases of perinephritis little can be found in the literature. The urine as examined bacteriologically both microscopically and culturally in thirty-four of the author's forty-seven cases. Of the thirty-six cases of questionable etiology a bacteriological examination was made in twenty-five. Staphylococcus chiefly staphylococcus aureus were found in thirteen streptococci in two a coccid resembling the paratyphoid in one diplococci in one colon bacilli in five and an anaerobic bacillus resembling the bacillus thetoides in one. The culture was sterile in only four instances. Therefore staphylococcus was found in half of the cases and it is possible that in the earlier stages of the disease they would have been found more frequently. Animal experiments also have shown that especially the virulent strains of staphylococci are not apt to produce embolic metastatic cortical foci.

Histological studies of cases of renal infection lead to the same conclusions. The staphylococcus aureus predominated in the author's material but in the cases of eliminant on nephritis reported by Heller in the staphylococcus aureus as pre-empted almost exclusively. As the virulent staphylococcus is perhaps found most often in furuncles, carbuncles and paronychia it is easily understood why perinephritic abscesses develop in the periphalic foci. Males develop perinephritic abscesses more frequently than females probably because by reason of the occupation they are more subject to traumatic peripheral infection which provides portal of entry for the staphylococci.

In infectious nephritis in general colon bacilli have been found in from 70 to 90 per cent of the cases but these figures are evidently too high because they include also chronic renal suppurations in which as is well known colon bacilli often persist in the urinary tract after the staphylococci and streptococci have disappeared. At any rate the incidence of hematogenous colon bacillus nephritis appears to be greater than that of staphylococcus nephritis.

In the author's cases of perinephritis the colon bacillus was found only four times in the urine and simultaneously in both the urine and the pus in only one case. Hence there was only one case of colon bacillus perinephritis due definitely to acute hematogenous renal suppuration. Moreover in a review of the literature the author was unable to find a single positive case of colon bacillus perinephritis due to acute renal infection.

The author's case was probably one of colon bacillus elimination nephritis in which secondary infarction foci ruptured or reached the fatty capsule by way of the lymph stream. The abundance of leucocytes in the urine also indicated a pyelitis type of condition. The colon bacillus rarely produces typical pus foci whereas in the author's case thin pus was found in the oedematous fatty capsule. In the two other cases in which the colon bacillus appeared in the urine staphylococci were found in the urine the colon bacilli being evidently secondary invaders of the urinary tract.

The tubercle bacillus has also been regarded as a typical cause of metastatic embolic renal infection but in the literature there is no report of a case in which a typical tuberculous perinephritis was present without a pyonephrosis. Tuberculous elimination nephritis is more common than the embolic metastatic form.

Through the finding of bacteria especially of staphylococci or streptococci in the urine we may establish with certainty provided there are no chronic renal symptoms the simultaneous presence of the excitants of the infection in the blood and thus the assumption of the presence of a perinephritic abscess is considerably facilitated.

From the etiological standpoint the finding of bacteria in the urine is not unconditionally indicative of a renal abscess as experience has shown that the excitants of the infection can be cultured from the urine in many surgical infections. However they are not found by any means regularly or they appear for only a short period of time and often in only very small numbers. Although this bacterial elimination does not seem to occur through the intact kidney the renal changes may be relatively insignificant and there may be no clinical symptoms on the part of the urinary tract. However if a true infectious nephritis results its symptoms may be recognized from the urine.

It has been asserted that a sudden fall in the fever after the opening of the perinephritic abscess indicates that the infection did not have its origin

in the kidney. Nevertheless it has been observed that the opening of a renal abscess is followed relatively often by a critical fall in the fever. In two of the cases of perinephritis following pyonephrosis in the author's material the fever dropped after incision of the abscess but in seven cases it persisted for some time. A critical fall in the fever after the opening of the abscess is therefore of no etiological significance. Moreover it has been found that cortical abscesses heal rapidly so that only the complication persists and the fever falls after the disappearance of the complication. In twelve cases due primarily to an acute renal infection the critical fall in the fever indicated only how circumscribed the renal foci were in these cases. In fourteen cases the fever dropped at first but later there were short febrile periods although the pus cavities showed no symptoms of retention and the amount of suppuration did not increase with the repeated dropping of the fever. Therefore the fever resembled the type which is usually associated with infectious nephritis.

Finally the changes in the urine and the fever must be considered together in determining the point of origin of the perinephritis.

In eleven of the author's forty-seven cases the condition began in association with a chronic renal infection and the etiology was clear. In most of these the diagnosis was confirmed at operation. In five of the remaining thirty-six cases a renal abscess was found either at operation or autopsy. In nine cases the urine contained albumin and a relatively large number of leucocytes and bacteria either in the beginning or later and there were postoperative febrile periods. So many findings suggesting renal involvement could have been due only to an infectious nephritis. In these cases the perforation of a large abscess could not have occurred as a communication between the renal pelvis and the perirenal tissue was found at operation only once. It is more likely that in addition to embolic metastatic foci in the cortex there were also medullary foci from which the infection spread to the renal tubules either directly or by way of the lymph stream. It is possible also that in acute pyelitis the infection involving the renal cortex and producing infectious foci in that region extends to the perirenal tissue either directly or by way of the lymph stream.

In five cases the urine was macroscopically clear and the sediment showed few leucocytes erythrocytes and bacteria later but the fever persisted after the operation as in the other group. The author believes that in these cases also the clinical picture was not due to bacterial elimination alone but also to embolic metastatic renal infection.

In five cases the urine contained albumin and numerous erythrocytes at first and numerous leucocytes and bacteria later but the fever dropped by crisis after the operation. The fall of the fever did not indicate the absence of a renal affection but suggested that the renal abscesses were limited to a circumscribed area. Although cystoscopy was done in only a few of these cases it indicated that

the urinary changes in these cases also in which they were relatively insignificant were not due merely to bacterial elimination.

In two cases the urine contained leucocytes but was sterile. However as considerable time has passed since the beginning of the illness the renal abscess may have healed and the bacteria may have disappeared from it.

Even in the urine of normal persons isolated leucocytes may be found but as a rule epithelial cells are present in addition. Also in febrile diseases the urine may contain a small amount of albumin, hyaline and epithelial casts, epithelial cells and isolated leucocytes.

In hamatogenous embolic focal epithelitis on the other hand the urine regularly contains leucocytes and erythrocytes chiefly in the beginning of the disease but in general the leucocytes are more numerous than the other elements. Bacteriuria and funguria are extremely important and rarely absent.

The author therefore concludes that in each case with relatively insignificant urinary changes it is possible to determine whether or not a renal abscess is the ultimate cause of the perinephritis not only from the quantity but also from the quality of the urinary sediment.

THE SYNDROME

The disease may begin either very acutely or insidiously. In thirty-three of the author's cases it began relatively suddenly with aching pain in the lumbar region and with fever, which usually as of the intermittent type. Intermittent fevers are characteristic and followed by a severe chill which may have indicated that the embolic material has reached the blood stream and the renal cortex.

In thirty-one cases the most noteworthy and constant symptom was pain in the lumbar region. In some cases this radiated to the urethra, the perineum, the inguinal region or the thigh. In several cases there was urinary stasis and marked urinary changes. As a rule the stricture did not last long. Every movement affecting the kidney caused a reaction, increased the pain.

In fourteen cases the disease began insidiously with diffuse symptoms such as lassitude but ultimately a swelling in the lumbar region was noted. As a rule however the typical signs in the lumbar region developed before the swelling had become marked.

In many cases the disease began with acute diffuse symptoms, a symptom localized in the lumbar region which persisted for several days and then ceased. Secondary attacks there were none. After this time the symptoms of the perinephritis were felt and the renal function evidently developed during the first attack.

After the formation of the perinephritic abscess the lumbar pain became continuous and in the majority of the cases a lumbar swelling appeared. When the pus localized behind the kidney or at the lower pole of the kidney the swelling was diffi-

cult to palpate. When the kidney could be palpated, it often seemed to be enlarged and suggested a renal tumor. In some of the cases nothing pathological could be found in the kidney region at first especially when the abscess lay at the upper pole. In most cases however the tumor mass was quite large extending from the border of the ribs to the iliac crest and to the umbilicus.

Typical of the condition is the restricted mobility of the kidney on respiration and on attempts to move it by palpation. In the later stages fluctuation is noted. Gradually the lumbar muscles become infiltrated and the pus perforates subcutaneously into the lumbar region or the lower part of the abdominal wall. Relatively often the extension of the process downward along the ileopsoas muscle causes flexion of the hip a day or two thereafter a resistance is noted in the iliac fossa or the inguinal region. In some cases obstruction may be present. Perforation of the pus into the peritoneal cavity is rare and usually fatal.

When the abscess is situated at the upper pole of the kidney the local symptoms are at first insignificant. The first signs of the condition in such cases are pleuritic symptoms and pain and tenderness below the border of the ribs and in the hypochondrium. After the abscess has ruptured into the subphrenic space it causes other symptoms and dullness over the lower portions of the lungs and pleurisy are often found.

DIAGNOSIS

A sudden onset with fever, chill pains in the lumbar region, a relatively clear urine with few leucocytes and a staphylococcal character of the embolic metastatic abscess if the embolus had a diagnosis of perinephritic abscess rendered positive only by puncture fluiding positive roentgen ray findings or a swelling in the region of the kidney.

TREATMENT

It is generally agreed that suppurative foci in perinephritis must be treated surgically. Although a cure is sometimes obtained by conservative treatment, surgery gives better results. The result of surgery is best when the operation is performed early. However, operation is indicated only when the true symptoms of perinephritic abscess are noted. In the author's cases the usual blue lumbar cystoscopy was used. The surface of the kidney is palpated and fluctuating areas are broken into with the finger. In all of the author's thirty-one cases which were operated upon only one, namely, was dead at first and a second stage. The only exceptions were cases of pyonephrosis in which the bacteria could not be treated according to the indicated plan.

When the abscess had gravitated to the inguinal region a second incision in the lumbar region was necessary.

The after-treatment of the abscess cavity as carried out according to the usual surgical principles.

The postoperative complications were relatively slight. The fever dropped by crisis in only twelve cases, in the rest it dropped by lysis or lasted a few days longer and then dropped. In several cases the febrile picture typical of infectious nephritis persisted without symptoms of retention.

There were no serious postoperative pulmonary complications. One patient developed erysipelas and another a fecal fistula. In one case a nephrectomy was followed by a large fecal fistula. The abscesses usually healed quickly. In five cases healing occurred in a few weeks, in twelve in a month and in two in four months (complications). In cases not operated upon healing required from three to four months.

PROGNOSIS

The prognosis of perinephritis due to pyonephrosis is extraordinarily poor but in the other types of cases it is relatively favorable.

LOUIS NEUWELT M.D.

Corbus B. C. and Danforth W. C. Pyelitis in Pregnancy. *J. Urol.* 927 xiii 543.

Pugh W. S. Pyelitis of Pregnancy. Its Treatment with the Indwelling Catheter. *J. Urol.* 197 xiii 553.

Crabtree E. G. Stricture Formation in the Ureter Following Pyelonephritis of Pregnancy. *J. Urol.* 197 xiii 575.

CORBUS and DANFORTH review cases of pyelitis of pregnancy supplementing their report with pyelograms. After termination of the pregnancy definite changes in the urinary tract were demonstrated in all but the authors believe that in some instances these changes were present before the pregnancy began. The acute attack of urinary infection during gestation being due to activation of the original lesion by the pregnancy and in some instances additional obstruction produced by the pregnant uterus. As the termination of the pregnancy does not cure the urinary infection the treatment should be continued until the urinary tract has become normal or as near normal as possible.

PUGH states that the treatment of pyelitis of pregnancy should include the forcing of fluids and drainage of the renal pelvis by an indwelling ureteral catheter preferably a large catheter opaque to the X-rays. The larger the catheter the shorter the duration of illness. Though there may be some discomfort during the early stages this will pass away as drainage is established. Operative intervention is rarely indicated.

CRABTREE concludes that stricture of the ureter due to pyelonephritis of pregnancy may occur in locations not affected by the fetus. The delay of symptoms until several months after delivery he attributes to the fact that during pregnancy there is a dilatation of the entire ureter and renal pelvis. He reports a case in which a stricture of the ureter demonstrated prior to pregnancy subsequently disappeared in the ureterogram but several months after delivery could again be definitely seen. He

reports also a case of ureteral stricture following acute pyelonephritis of pregnancy which showed a direct relation between the kidney condition and the blood pressure. Following a nephro-ureterectomy the blood pressure returned to normal and the general condition became markedly improved. The pathological specimen showed cicatrization of the ureter for a distance of about 3 cm. this indicating that palliative dilatation of the ureter would probably have failed.

J. SYDNEY RITTER M.D.

Moller W. A Simple Improved Method of Extracting Deep Calculi from the Ureter. (Eine verbesserte und einfache Methode zur Extraktion tiefsitzender Uretersteine). *Acta chirurg. Scand.* 197 lxi 367.

In the extraction of a calculus from the intravesical part of the ureter the author made use of a pair of Bruening forceps which are intended for the extraction of foreign bodies from the bronchi. He inserted the forceps into the bladder at the side of the cystoscope.

With the use of suitable end pieces this instrument may be employed partly for dilatation of the ureteral orifice and partly for grasping and extracting the concretion. Its introduction is simple and the manipulations which can be controlled by direct vision are exact, painless and apparently free from danger. The use of the instrument should be restricted to concretions in the lowest part of the ureter in the female.

Hunner G. L. Ureteral Stricture and Chronic Pyelitis in Children. *J. Dis. Child.* 192 x 603.

In most of the infants and children treated for chronic pyelitis by the author ureteral obstruction attributable to ureteral stricture has been found and in many cases the establishment of urinary drainage by dilatation of the narrow area in the ureter has resulted in a cure. It is generally believed that the only treatment for chronic pyelitis in children is medical and dietary or in extreme cases surgical. To date the additional use of vaccine has proved of no value. The treatment of chronic pyelitis in children has been based on the supposition that the condition is secondary to gastro-intestinal disturbances but since the urologist has found that the gastro-intestinal disturbances often clear up after the establishment of effectual renal drainage it is evident that when such disturbances are associated with definite symptoms referable to the urinary tract the treatment should not be limited too long to the gastro-intestinal tract.

The author believes that most of the chronic infections of the upper urinary tract are located in the renal pelvis and may be classed as pyelitis or infected hydronephrosis. This view is supported by the observation that in 80 per cent of cases of ureteral stricture with varying degrees of stasis and dilatation in the upper urinary tract there is no urinary infection or history of previous infection and in the 20

per cent high show infect on the pus disappears promptly and the ureter becomes sterile after dilatation of the ureteral stricture and the establishment of good drainage.

Failure of the pyelitis to clear up promptly after dilatation of the stricture in the lower ureter may be due to (1) persistence of the narrowing because of repeated irritation from some distant focus of infection (2) secondary narrowing at or near the pelvic ureteral junction or (3) an unusually large pelvic calculus encasement of the kidney and the interference with drainage.

In cases of the first type the eradication of the focus of infection will result in permanent drainage and a cure of the pyelitis. In cases with a secondary narrowing the passage of bulbs of catheters is effective in the pelvis to all effect a cure. In cases of unusually large pelvic calculi the release of adhesions dilatation of the pelvic ureteral stricture resection of the enlarged pelvis and high ligation of the kidney are indicated.

Urographic kidneys are still interpreted as the cause of hydro-nephrosis. Impairment of drainage of the kidney by ureteral obstruction has been performed for the correction. Frequently however obliteration of the original lower stricture is followed by spontaneous recanalization of the pelvis and kidney by the resulting good drainage and clearing of the infection.

In practice all cases of stricture of the ureter require immediate dilatation. As a rule the patient returns for repeated ureteral dilatations so long as such a infection persists but when the focus is removed a permanent cure usually results after a few more dilatations. The effects of stricture may be better related to late infection. According to recent investigation of Schreiber stricture may result also from congenital malformations such as the acanthosis of a normal kidney in the ureteral kink obstructive cystic degeneration of the ureter such as the cystic degeneration and uterine invasion of the uterine wall. In the case of a renal tumor a dilatation of the ureteral wall.

In some cases pyelitis may be the result of cystitis but most cases of the infection have been a part of the infection of the urinary tract. If the ureteral calculus is present usually no normal drainage of the kidney is usually established as soon as the cystitis subsides and the infection in the kidney subsides synchronously with that of the bladder. When the infection is continued stasis in the kidney due to malposition when perinephritic reaction of the ureteral adhesion have developed during the attack of the kidney when the infection has been a dilatation of the stricture with stasis the acute pyelitis may persist until the ureteral channel is opened.

Since the part played by ureteral stricture in most chronic renal infection has been recognized the good result obtained from renal lavage have been attributed to the dilatation of the renal catheter rather than to the solution used.

In thirty-four cases of renal involvement in children fifteen years of age or younger the following conditions were found: pyelonephrosis one case hydro-nephrosis six cases hematuria three cases congenital malformation one case renal calculus two cases tuberculosis fourteen cases and chronic pyelitis twelve cases. Lot 5 N. VELT M.D.

GENITAL ORGANS

Wildb. 12 II Tests of Renal Function in Prostatic (Urb. N. f. l. t. pr. f. e. b. P. s. u. k.) Z. f. f. l. C. I. 97 v. 46

The author reports his last 135 prostatectomies in which the function of the kidneys as determined before the operation by three methods viz the dilution and concentration test the dye excretion test and determination of the residual urea in the blood.

The dilution and concentration test of Strauss proposed to be the most sensitive test the first shows a loss of secretory power. In none of the patients with more than 100 ccm of residual urine were the results normal. Particularly the power of concentration as considerably diminished as a rule but this improved partially under regular catheterization. The efficiency of Bechler proved to be of little value.

The dye tests (indigocarmine and phenolphthalein) showed defective renal function less regularly. The author always injects the dye into a muscularly contracted intravenous injection of foreign substances is not always entirely harmless. He prefers phenolphthalein because the amount of dye that is excreted within the first and second hours is chiefly important and this is easier to estimate with phenolphthalein.

The author determined the amount of residual urea in the blood by the hypobromite method with the use of the Jauterburg apparatus a procedure which requires only 5 ccm of blood. He considers 50 mgm of residual urea in 100 ccm of blood serum as a normal amount (maximum). As a rule the operative was done only when the residual urea in the blood was less than 50 mgm but a number of cases it was performed because the values are higher because the other tests of function showed good values—70 and 85 mgm. In one case in which there were 85 mgm of residual urea and the other tests also showed poor results the infection occurred eight days after the operation when the residual urea had increased to 100 mgm. Thus as the lymphatic drainage of the prostate is not so definite an indication for prostatectomy but it is rather as a sign of a high creatinine of the urine of the use of the function tests in a kidney. A favorable result of the test of other hand is a concrete result of other

In summary the author remarks that none of the methods used is ideal because as to whether the dilatation of the kidney is or is not allowed a prostatectomy in a favorable result of the dilution test is not itself a definite indication for prostatectomy but it is rather as a sign of a high creatinine of the urine of the use of the function tests in a kidney. A favorable result of the test of other hand is a concrete result of other

a minimum and a maximum of more than 0.015 seems to indicate good renal function

With the phenolsulphonphthalein test (intramuscular injection) the limit of operability in the case of a prostatic is indicated by the excretion of 10 per cent of the dye in the first hour provided the values are considerably higher in the second hour and the other functional tests show satisfactory results. As a rule all three tests result either favorably or unfavorably. When this is the case the decision is easy. In other cases repeated control tests are necessary. Each method gives information regarding only some of the function of the kidneys and a poor result of a single test does not necessarily indicate renal insufficiency. Only high residual urea values in the blood are an absolute contra indication to operation.

In determining the operability of borderline cases the author considers not only the condition of the lungs and vascular system but also the possibility of performing the prostatectomy by the perineal route. He regards the perineal prostatectomy as less injurious to the general condition than the suprapubic prostatectomy and has observed also that the residual urea in the blood after operation by the perineal route rises much more slowly and to a less extent than following the suprapubic procedure.

Wildbolz urges treatment by regular catheterization for some time previous to prostatectomy. Even very seriously defective renal function may be so improved by the relief of urinary stasis that after a few weeks the operation can be carried out successfully. For this preliminary treatment the author prefers regular catheterization or the use of a retention catheter to the two stage prostatectomy since in certain renal injuries the preliminary suprapubic section may itself produce uræmia. But the surgeon should not be led to perform a prostatectomy merely because the clinical picture has improved under preliminary treatment; his decision to operate should always be based on the results of repeated tests of renal function.

JANSSEN (Z)

Thomas B A. and Robert J T. Prostatic Calculi. *J Urol* 927 xviii 470

Prostatic calculi may be classified as primary or endogenous and secondary or exogenous. The former are septic or aseptic. It is now thought that they begin as corpora amyacea the result of natural function. They are at first composed of organic matter but later are impregnated by earthy constituents becoming dense and opaque concretions from the deposition of calcium phosphates and carbonates. Inflammation and obstruction aid the process and infection plays an important role. In 68.6 per cent of the cases there is no history of gonorrhœa.

Iosphatic calculi have been found as early as the tenth year of life but they occur most often in the fifth decade. The vast majority are intraglandular. They are found usually in the lateral lobes and as a rule are bilateral.

Prostatic calculi are most commonly associated with chronic prostatitis and frequently with neisserian infection. They are rarely found with malignancy. Their most common symptoms are frequency and difficulty in urination, burning urgency, hæmaturia, retention of urine and perineal pain.

The most reliable method of diagnosis is X ray examination. Rectal examination reveals crepitation and a nodular or stony hardness.

Serious sequelæ may be averted by early intervention. Prostatic calculi do not tend to recur.

The best treatment is prostatolithotomy with thorough removal of all particles. Sometimes a stone may be crushed and removed through the endoscope.

BENJAMIN F ROLLER M D

Thomas B A. Vital Factors in the Management of Prostatic Obstruction. *Ann Surg* 1927 lxxx i 563

As a prophylactic measure in cases of prostatism Thomas urges early operation before organic complications set in. In cases of prostatic obstruction cystoscopic examination is necessary to determine not only the type of obstruction but also the presence or absence of associated pathological conditions such as diverticulum, tumors, calculi and hypertrophy of the trigone. In about 10 per cent of the cases some form of bar formation and a contraction of the bladder neck are found.

In deciding whether to operate or whether to permit so called catheter life the author's axiom is:

Operate if you dare to and catheterize only if you must. When possible surgery is better.

Operation should be preceded by:

1. Determination of the kidney function by estimating the blood urea nitrogen. A reading of over 30 mgm denotes a poor risk. The author determines the quantitative elimination of phthalein making collections during three twenty minute periods. When the kidneys are damaged the duration of elimination is delayed and hence the output of the first interval may be almost nil at times. When the output is less in the first period than in the third period injury of the kidneys is indicated.

2. A study of the cardiovascular system with particular attention to the blood pressure readings. When in cases with low tension the systolic pressure is 110 or less the diastolic pressure must be over 60 when the diastolic is less than 60 the systolic must be over 110. When in cases of high tension the systolic is 180 or more the diastolic must be less than 100 when the diastolic is over 100 the systolic must not be over 175. This is not pulse pressure in the usual sense but rather pulse pressure with systolic and diastolic limitations.

3. Routine tests such as the blood Wassermann reaction, the determination of the coagulation time of the blood, routine blood sugar estimations and examinations of the central nervous system for evidence of disease.

Age *per se* is never a vital factor in prohibiting surgery of the prostate. Modern urology which

has made an art of both pre operative and post operative care has reduced the operative mortality from 50 per cent to less than 5 per cent

The author prefers the use of a retentive catheter when possible to first stage cystotomy. A view of the bladder neck is the best index to whether surgery should be done by the suprapubic or perineal route or by some form of puncture operation. The suture ligation of the bleeding point at the time of portotomy is favorable. Ligation of the prostatic bed is considered the least desirable method of controlling hemorrhage. Vasectomy is done only for recurrent epididymitis. If embolism, phlebitis and epididymitis be present, ligation must not be allowed out of bed too soon.

M M M D

MISCELLANEOUS

Kr tschme H L Urological Problems in Infancy and Childhood *J U I* 97 433

The author reviews the urological findings in the cases of eighty-six children ranging in age from twenty-seven days to fourteen years. Twelve of the children were under two years of age. Forty-two were boys. With the exception of pyelitis the incidence of the various lesions as about the same in both sexes. Pyelitis was found more frequently in girls than in boys.

Kr tschme is of the opinion that medical treatment of urological conditions is frequently continued too long but that in the case of children it should always be tried before complete urological examination is made.

In the past cystoscopy with ureteral catheterization has been regarded as inadvisable in the case of children because it is a major procedure requiring an anæsthetic and is often followed by a severe reaction. The author believes that all of these objections are unfounded. First, the urologist has been properly advised as to the proper instruments to be used. In his opinion the indication for cystoscopic examination are the same in infants and children as in adults.

Besides the establishment of urological diagnosis the urologist is being called upon more and more frequently to make differential diagnoses of abdominal conditions and to differentiate between lesions of the right upper quadrant of the abdomen and the right kidney.

In Kr tschme's method of procedure a complete history is first obtained. A complete physical examination including a search for evidence of infection is then made. The third step is a careful examination of the urine. This is followed by an X-ray examination of the urinary tract to demonstrate possible calculi or if the tubercle is of the kidney, to suspect the presence of calcification. Cystography is not done as a routine procedure but may give valuable information. The physical examination reveals a suprapubic tumor. Tests of renal function are always carried out and especially important in cases of recent acute infection of the kidneys in which cystography and a dynamic urography might be dangerous. After all of the other examinations have been made cystography and ureteral catheterization and pyelography are done. These examinations are rendered possible in the cases of children by the very small caliber of cystoscopes that are now available. For a rapid technique practice is essential.

The author prefers to induce a general anæsthesia but states that there is little objection to the use of the ether mask if minutes should be sufficient for ureteral catheterization. In many cases cystography and ureteral catheterization can be done under local anesthesia.

In conclusion Kr tschme states that at the present time favorable treatment of medical conditions is a complete urological study is definitely indicated in all urological conditions in children which do not respond promptly to medical treatment. He has found that instrumental therapy such as ligation of pyelitis and lithotripsy for bladder stones can be carried out with the same procedure in children as in adults and that the ultimate treatment of the various lesions of children is no special problems.

H NRY L S ORD M D

SURGERY OF THE BONES, JOINTS, MUSCLES, TENDONS

CONDITIONS OF THE BONES JOINTS MUSCLES TENDONS ETC

Bernstein M A and Arens R A Epiphyseolysis
Radiology 1927 15 497

Epiphyseolysis called also slipping epiphysis acute epiphysitis and epiphysal cox vara is a condition of uncertain etiology. It is claimed by many to be due to an endocrine disturbance but has been attributed also to often repeated slight trauma. It occurs most commonly at the age of adolescence. It results pathologically in softening and separation of the epiphysal cartilage which cause the head of the femur to separate from the neck. When the separated head is reduced and maintained in normal relation to the neck it becomes re attached. The condition often leads to moderate cox vara. It is associated with considerable pain muscle spasm muscular rigidity external rotation and adduction of the thigh. In most cases only one hip is involved but occasionally the separation may be bilateral.

The authors discuss the various theories regarding the etiology and the etiological factors noted in the cases observed by them. The mechanism involved in the production of the condition is described and the roentgen findings noted at various stages are given in detail and illustrated by roentgenograms.

A diagnosis in the early stages before there are well defined roentgenological findings is very difficult if not impossible. The presence of a beginning epiphysitis is suggested when a young adult suffers from acute pain in the hip joint or as is more usual a pain in the knee with the progressive development of disability. Examination may reveal adduction external rotation slight flexion muscular rigidity muscle spasm shortening of the extremity and limitation of abduction. The roentgenogram may show a slight loss of density of the head of the femur widening of the epiphysal line and a slight rarefaction around the epiphysal portion of the neck. When separation of the head has occurred the diagnosis is not difficult.

The condition must be differentiated from acute septic epiphysitis tuberculous fracture of the hip and Legg Perthes disease.

The histories of five cases seen by the authors are given in detail. ADOLPH HARTUNG MD

Rogers M H The Formation of Rice Bodies in Tuberculosis *J Bone & Joint Surg* 1927 15 636

The study of a case of tuberculosis with positive guinea pig inoculations and microscopic findings revealed that rice bodies are composed of tuberculous material are first attached to the wall of a tuberculous cavity and are formed from the center of a tubercle. DANIEL H LEVINTHAL MD

Bressot and Fischer Two Cases of Periosteal Sarcoma One Patient Who Was Treated by Roentgenotherapy Has Remained Cured for a Year and Eight Months the Other Who Was Operated upon Died Five Months Later (Deux cas de sarcome périostique l'un traité par radiothérapie reste guéri depuis vingt mois l'autre opératé meurt en cinq mois) *Lyon chir* 1927 4 5

The first case reported was that of a man of twenty five years who developed a tumor on the upper extremity of the left humerus. The arm was intermittently painful and the circumference of the arm at the center of the tumor (which was on a level with the center of the deltoid) measured 4.5 cm more than the circumference of the other arm. The clinical symptoms—slow evolution of the growth and only moderate local disturbances—suggested that the tumor was benign but the roentgenogram showed the changes characteristic of periosteal spindle cell sarcoma as established by Lavernier and others.

As the patient refused to allow amputation roentgen treatments were tried being given in two series of sixteen daily sessions each with an interval of two months between the series. Both anterior and posterior irradiations were made. The total duration for each site of application was three hours and twenty minutes for the first series and three hours for the second series. By the end of the first half of the treatments the size of the tumor had diminished by about one third and the pain had ceased entirely. At the close of the second half the patient was able to resume his military service.

Subsequent examinations carried out at intervals during 1926 showed that the regression of the tumor had continued after the termination of the treatments. One year later the size of the left arm was reduced to normal all clinical signs of the tumor had disappeared and the general condition was excellent. The patient was still in good health in January 1927 when he was last seen. The last roentgenogram taken in March 1926 indicated almost complete resorption of the tumor regeneration of the cortical layer and cicatrization of the periosteum.

The authors second case was that of an eighteen year old boy who was placed in a plaster cast after a swelling in the juxta epiphysal region of the tibia had been diagnosed as tuberculous arthritis. On removal of the cast forty days later the clinical signs indicated clearly that the tumor was a sarcoma of rapid evolution. This diagnosis was confirmed by a new roentgenogram which showed that the neoplasm originating in the superior epiphysis of the tibia had broken through the cortical layer and

tendon sheaths and wrist joint in much the same fashion as tuberculosis

On cut section xanthomatic tumors look very much like adrenal tissue having a marbled appearance with a mixed coloration of red and yellow the latter being the color from which they received their name. The color is due to carotin and xanthophyll and not to cholesterol

The microscopical picture is characterized by the presence of foreign body giant cells often in large number and by foamy cells or xanthoma cells which are large polyhedral cells with cytoplasm filled with vacuoles containing cholesterol. Fibroblasts and connective tissue blood sinuses deposits of blood pigments and recent areas of hemorrhage are found. There is no element which is incompatible with granulation tissue. The xanthoma cells seem to develop from endothelial cells and fibroblasts after the taking up by the latter of cholesterol and other lipoids resulting from the destruction of tissues

In three of the cases reported blood cholesterol determinations were made and were found to be within the normal limits. The authors conclude that there is no evidence that the isolated tumors are the results of an increase in the blood cholesterol despite the fact that the multiple growths are often associated with such an increase

The tumors occur as a rule during adult life and trauma appears to be a factor in their development. Females are slightly more often affected than males. Of the tumors occurring on the arm 63 per cent occur on the right arm or hand. In decreasing frequency of involvement the areas of the hand in which the tumors develop are the index finger the thumb the middle finger the little finger the palm the ring finger and the wrist. The tumors are most common on the flexor surface

Few symptoms are produced by the growths. In rare instances there is pain or tingling along the finger. The tumors have a tendency to grow after being traumatized but this is not to be taken as evidence of malignant change. They have the consistency of a fibroma. This characteristic and the yellow and reddish brown coloration are enough for the macroscopic diagnosis. They are quite benign and do not produce metastases although a certain percentage recur after their removal. If well removed they do not tend to recur but when they form again a second local removal rather than a mutilation operation is indicated

Herndon R F Three Cases of Tabetic Charcot's Spine *J B & J Surg* 1927 15 60

The author reports three cases of Charcot's spine in men with the typical neurological signs of well developed tabes

The first was that of a miner who had been squeezed between a pit car and a rib of coal ten years previously. Five years after the accident a lump appeared in the lumbar region. This slowly increased in size but did not interfere materially with the man's work. The lumbar region of the spine was

slightly shortened and its central portion presented an acutely rounded almost angular kyphosis with slight scoliosis. Palpation revealed a hard not tender thickening. Although this portion of the spine was fixed the mobility of the entire spine was greater than normal so that in bending the patient appeared to have a hinge in the lumbar region. There was also painless disorganization of both ankle joints

The roentgenogram showed advanced destruction of the second and third lumbar vertebrae with compression rotation and scoliosis. The intervertebral spaces were obliterated. The involved vertebrae were bridged and supported by large osteophytes

When the patient was examined again four years later there had been marked progression of the condition with such disorganization of the lumbar spine that he was unable to hold his trunk erect without support. The roentgenogram showed almost complete disappearance of the fifth lumbar vertebra and erosion of the upper part of the sacrum

The second case was that of a miner who experienced pain in his back about two weeks previously while lifting. His spine showed a sharp kyphosis extending from the eleventh dorsal to the third lumbar vertebra. Movements of the spine were normal except that the segment involved was fixed

The roentgenogram showed a relatively early process involving chiefly the first lumbar vertebra but causing destruction of the space below it tilting and rotation. Osteophytes had already produced ankylosis

The third case was that of a farmer who after ten years of tabetic manifestations developed weakness and lameness of the left leg and later a painful catch in the lower back with pain radiating generally into both legs. His back became tired easily and he found it irksome to sit or stand for any considerable length of time

Physical examination showed shortening of the lumbar region and a sharp kyphosis with its greatest prominence over the fourth vertebra. The roentgenogram revealed almost complete destruction of the fourth lumbar vertebra with mushrooming and enormous proliferating osteophytes on either side

The initial change in Charcot's spine seems to be a simple breakdown of one of the lateral articulations of the vertebral body associated with a decrease in the cartilaginous space. As the bony destruction continues there is compression of the vertebral body with displacement posteriorly and laterally. Usually the process is limited to one two or three vertebrae so that the deformity is localized and acute. Proliferative changes are abundant the affected region of the spine being usually ankylosed. Separated fragments such as are frequently discovered in the knees and ankles are rarely found in the spine

The local findings are characteristic. In addition to more or less swelling and infiltration there is usually a sharp kyphosis with more or less lateral curvature and rotation and some shortening due to compression. The involved section of the spine is

usually rigid because of ankylosis by bony deposits. However the movements of the entire spine are usually normal or increased by the local disorganization. There is practically no tenderness and no involuntary muscle spasm.

One of the most characteristic features of Charcot's spine is the disproporportion between the severity of the process disclosed by the roentgenogram and the slight discomfort and disability of which the patient complains.

Boorstein S W Osteochondritis of the Spine with a Report of Two Cases. *J I Surg* 97 69

Vertebral epiphysealitis is characterized by development of the spine in the form of a knuckle or a generalization of kyphosis or scoliosis with little or no pain.

The roentgenograms usually show that only one vertebra is affected. This vertebra assumes a cup-like form shape. The epiphysis is involved to the distal above or below it. The cartilage is usually thick.

The etiology of the condition is largely unknown. The disease and Osgood-Schlatter disease is unknown. In the treatment immobilization in a plaster Paris jacket or brace is indicated. The infection should be sought.

In order that the clinical syndrome of osteochondritis of the spine may be definitely established every case of spinal deformity suggesting the condition should be studied.

The author reports two cases in detail. *D H L M D*

Fagge C H On Injuries of the Semilunar Cartilages. *B J Surg* 197 3

In Fagge's opinion the diseases of the cartilage injury can usually be made from the history. Motion has stated that when a fracture of the cartilage is of the bucket handle variety the patient is usually disabled by pain, effusion, locking, or a sense of insecurity in the joint. Fagge, however, has been unable to confirm this observation. Since practically all of his patients with a bucket handle fracture of the terminal semilunar complained of recurrence of disability with intermission of complete freedom from symptoms. An explanation for the intermittency of the symptoms in such cases is suggested by the fact that the torn strip is often found in its natural position instead of in the intercondylar notch.

Localized tenderness below and medial to the patella is a significant finding. The author believes that those who describe palpable cartilage at the point have been palpating swollen synovial free high roller under the palpating finger.

Locking is frequently the diagnosis as it may be caused by loose bodies of any type.

In discussing the mechanism of the injury, Walton claimed that the cartilage is fractured in full extension being caught between the two bodies. It is cited to a case of complete locking for which Martin laid stress on an inward twist as the effective factor. Attention to the close connection between the

terminal semilunar cartilage and the capsule and internal lateral ligament. He stated that if the cartilage is caught between the terminal condyle and the inner tubercle and dragged toward the center of the joint a split or tear results.

The author believes that flexion and abduction are necessary for a cartilage injury but that the joint must be gradually extending when the fracture occurs. According to some orthopedists rotation is important in the causation of these injuries but in Fagge's opinion this is not a necessary factor.

Morrison has observed that the cartilage is always torn but never entirely detached from the capsule.

Following the application of a tourniquet a free general exposure of the knee joint should be made in order that no lesion will be overlooked. In Fagge's technique a curved incision is made parallel with and in out of the lateral border of the articular surface of the internal condyle. The internal lateral ligament is carefully preserved. Except in a very few cases Fagge has not found it necessary to remove the articular cartilage. Preservation of the posterior attachment does not cause locking. Fagge does not remove the synovial fringe. Before release the tourniquet he applies a pressure bandage.

In the after treatment aspirin and morphine are indicated for the relief of pain and the knee slightly bent should be supported on pillows. Passive movements are contraindicated. Lagge's patients are up and walking after from seven to ten days. Massage of the quadriceps is then begun.

D H L M D

Cobb W R and Conley A H Injuries of the Meniscus and the Ligamentum Mammillare. Commonly Called Internal Derangements of the Knee Joint. *Surg Obs* 97 1

The medial meniscus may be injured by a fall on the knee by direct trauma. In the majority of these injuries exposure of the medial meniscus between the patellar tendon and the internal lateral ligament is the only lateral meniscus. When genu valgum is present the medial meniscus is still more exposed and probably more subject to injury.

From the pathological standpoint cases of injury to the meniscus may be divided into three groups.

Those in which the anterior portion of the meniscus is torn.

Those in which the lateral portion is detached.

Those with dislocation of the medial portion.

The standard operation is described.

Robt V Fu M D

SURGERY OF THE BONES JOINTS MUSCLES TENDONS ETC

Kline F L and Muir F C Comparative Results of Open and Non-Open Methods of Treatment of Tuberculous of the Spine in Children. *J B & J Surg* 97 649

Under conditions as nearly ideal as possible fifteen children under ten years of age with tubercu-

losis of the dorsal or lumbar vertebrae were chosen for a prolonged comparative test of the operative and non operative methods of treatment. So far as possible they were divided into pairs according to their age, the stage of the disease and their general physical condition. From each pair one child was selected for operation and one for prolonged frame treatment. In the surgically treated cases the Hibbs type of fusion was done. In both groups of cases the same physical and X ray examinations were made and the same after treatment was given. From time to time the children who were clinically free from symptoms whether operated upon or not were allowed to get up wearing a back brace in order to test the solidity of the healing. Such tests always led to a recurrence of symptoms in a shorter or longer period unless the roentgenogram showed a continuous firm bony bridge uniting the diseased vertebrae and disappearance of all signs of rarefaction between them.

Thirteen of the children are well and physically active. Eleven have small unimportant kyphoses. The only abscess that developed was present when the child was first seen.

One child who was operated upon has a marked kyphos and is not cured because the fusion did not include a sufficient number of vertebrae and because the child was taken home against advice and all treatment was stopped.

Another child who was treated surgically has a moderate kyphos due to failure of complete fusion of the laminae which necessitated a second operation.

All of the children except these two have flexible useful spines but the authors believe that the flexibility is greater in those who were not operated upon.

The following conclusions are drawn:

1. The cure of tuberculosis of the spine depends principally on long continued rest without weight bearing.

2. Cases in which fusion operations have been done require practically as long and careful after treatment as those without operation.

3. When cured patients not operated upon have more flexible spines than those treated surgically.

4. The possible shortening of convalescence does not justify the risk incident to operation.

The authors' cases will be kept under observation and a final report regarding them will be made later.

DANIEL H. LEVINTHAL, M.D.

FRACTURES AND DISLOCATIONS

Eskelund V. Fracture of the Lower End of the Radius (Colles Fracture) and Its Treatment. *Acta Chir Scand* 1927 121: 41.

In the 5 year period from 1921 to 1925, 34 cases of fracture of the lower end of the radius were treated at the Polyclinic of the Kommune Hospital of Copenhagen. Two hundred and twenty three of the patients were women. In the men the right arm was injured more frequently than the left whereas in the women the reverse was true. Frac-

ture of the styloid process was found in 46 per cent and fracture lines extended to the articular surface in 12 per cent of the cases.

The treatment consisted in reduction—usually without anesthesia—and the application of a plaster of Paris splint to the pronated, markedly flexed limb in ulnar abduction. After from 6 to 8 days of immobilization the splint was removed and massage was begun. Subsequent examinations in 66 cases (about 60 per cent of the total number) showed the results to be as follows:

	Excellent	Good	Fair	Poor
Functional	60	33	6	0
Anatomical	55	36	9	0

These results appear to be better than those reported in the literature available to the author but the period of treatment was somewhat longer as it averaged between 6 and 8 weeks and in 17 cases was more than 14 weeks.

Jackson R H. Simple Uncomplicated Rotary Dislocation of the Atlas. *Surg Gynec & Obst* 1927 44: 156.

Jackson reviews twenty even cases of simple rotary dislocation of the atlas recorded in the literature and reports four cases of his own. The dislocation is produced by rapid and uncontrolled rotation of the head. Ordinarily the odontoid process is not fractured or displaced but its condition must be ascertained before manipulative reduction is attempted. This determination is not always easy even with careful roentgenological study.

Following a description of the symptoms accompanying the dislocation the author states that if the lesion is not recognized and reduced it may result in sudden death from an increase in the dislocation or the development of myelitis months or years after the injury. When reduction cannot be accomplished by the closed method the advisability of open reduction must be considered.

In conclusion Jackson describes an operation devised and performed by Mixer and Osgood in 1906 and an operation performed by J. A. Jackson in 1918.

ROBERT V. FUNSTON, M.D.

Jefferson G. On Fractures of the First Cervical Vertebra. *Brit Med J* 1927 11: 153.

The author reports three cases of fracture of the posterior arch of the atlas in one of which the odontoid process was broken in addition. He reviews also sixty two cases reported in the literature and in a table gives the nature of the accident, the clinical signs of cord or nerve injury, the anatomical diagnosis and the results.

The chief symptoms of fracture of the first cervical vertebra are pain and rigidity of the neck.

With regard to the mechanism of the fracture the author reminds us that the lateral masses of the atlas are triangular with their wide base outward and that the upper and lower articular facets correspond

The fore when force is applied directly downward from the top of the head a tension fracture may occur and the atlas ring gives way.

The treatment of fracture of the first cervical vertebra is immobilization in plaster of Paris.

ROBERT V. FUNSTON, M.D.

Faint R. Roentgenograms of Fractures of the

Femur (1 g) ber d R tg f hm
F m f kt) A f ch g S d 9 l
5

In the study of roentgenograms of fractures of the femur especially those occurring in the middle third it is often difficult and sometimes quite impossible to determine the position of the fragments when anatomical detail all ing orientation are wanting. From the form of the fragments it is not always possible to decide with certainty which is the proximal and which the distal fragment or to determine the plane in which the roentgenogram was taken.

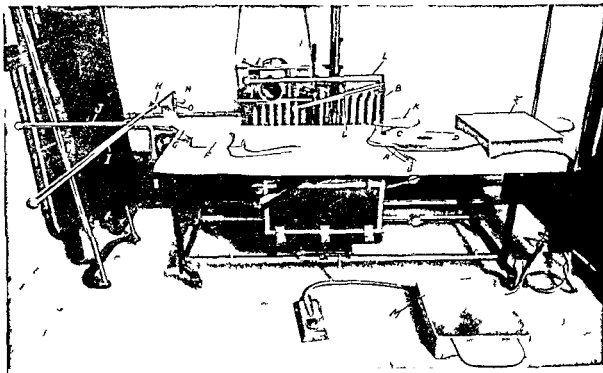
After discussing several methods of eliminating uncertainty by making the plates the author suggests the use of a thin metal disk measuring 4 by 3 cm and having perforated letters the disk to be fastened by means of adhesive tape to the left lower corner of the plate before the exposure is made. He

marks the disk for the right thigh with the abbreviated Latin inscription *dx dist lat* or *dx prox dors* depending upon whether the roentgenogram is to be taken in the anteroposterior or the lateral medial plane. For the left thigh the corresponding inscriptions are *sin dist med* and *sin dist dors*. Two metal disks are therefore necessary for roentgenograms of each leg.

The roentgenograms are put up for examination in such a way that the plate exposed in the anteroposterior plane shows the femur in the vertical position and the plate taken in the lateromedial plane shows the femur in the horizontal position. The positions in which the clinician is accustomed to examining fractures of the femur when the patient is lying on his back.

McCutchen L. G. A New Device for the Reduction of Fractures. Use, Advantages, and Results. R d l g 9 7 3 8

The author presents a device for the reduction of fractures under fluoroscopic control which seems worthy of a trial. He states that it is extremely simple in its operation and the amount of extension obtained by it is equivalent to the pull of more than six men. It is made of casted aluminum which is



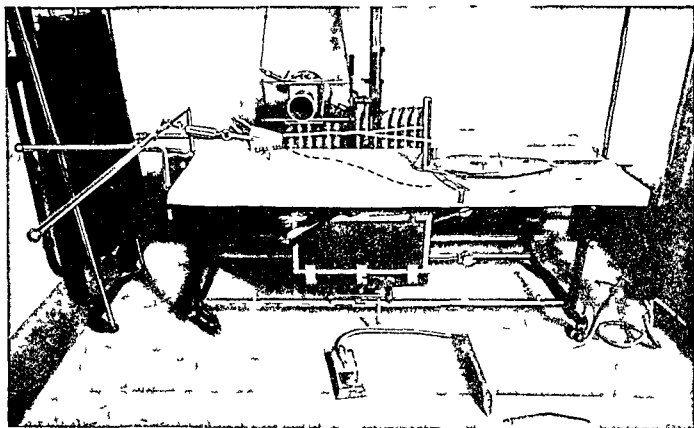


Fig 2 Device with cuff attached to ankle peg in crotch

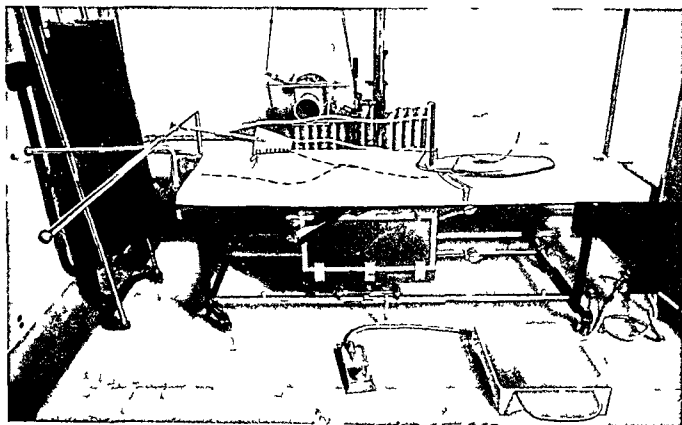


Fig 3 Device with cuff attached to wrist peg in axilla

I serve us to the X-ray light a strong and will not
 rust rarp. It is attached to the X-ray ope-
 ration from table by means of three sockets—one at the
 head and two at the feet of the table. All these
 sockets are bolted to the end of the table so that
 they fit evenly with the surface they in-
 volve the table or interfere with its function. The attachment
 of the lever equals less than three minutes.
 On let attachment it may be set as low as carried
 elsewhere for further use. In small hospital it
 eliminates the necessity for a separate fracture com-
 a fracture table. I wish to check it. J. R. M. D.

Inberg, K. R. Fle Strength f C tain Mat als
Used fo Ext nsion (B t h B l t f
h g k t g St c k b l) l t / g
S d o l

To determine the quality of a film and the maximal tensile strength of certain material used for retention the author carried out 10 experiments with two kinds of adhesive plaster and with

bands covered with mastisol Sinclair's glue and zinc glue determining the weights necessary to detach them from the skin.

He found that Sinclair's glue and zinc glue adhered most quickly and with equal rapidity. After forty minutes their resistance to detachment remained constant. The corresponding time for mastodons was four hours and that for ordinary adhesive plaster seventy minutes.

In the experiments with regard to strength masti-
col strips are found to be the strongest. Ordinary
adhesive plaster and Sinclair's glue with tooed price
fully the same load.

After the shaving of an area covered by con-
sidersible hair the tensile strength of ordinary
hair plaster was increased from 0 and 10 to
10 and 20 and the thicknesses and that of the
medium strip from 1/16 and five tenths to three
tenths. Therefore areas with much hair should be
shaved before the application of adhesive plaster
or strips covered with sticky material.

SURGERY OF THE BLOOD AND LYMPH SYSTEMS

BLOOD VESSELS

Carnett J B and Greenbaum S S Blood Vessel Visualization *J In Med* 1927 lxxvix 039

The authors discuss the experimental and clinical aspects of blood vessel visualization as an aid in the diagnosis of vascular disturbances such as embolism aneurism gangrene and thrombo angustis obliterans

Various opaque media were tried such as sodium iodide potassium bismuth tartrate dominal X and iodized oil Sicard and Forestier injected 1 c cm of iodized oil per kilogram into the femoral vein or artery of dogs without causing an untoward reaction According to the roentgen picture all of the oil disappeared in five minutes In the examination of two patients with diabetic gangrene Desplats was unable definitely to locate the arterial obliteration

The authors found that 6 c cm of iodized oil can be injected into the femoral artery without causing unfavorable results In the technique used by them the artery is exposed under local anaesthesia and the leg elevated The arterial pulsations are stopped while the intra arterial injection is made and until the first series of roentgenograms are taken Roentgenograms are made immediately after the injection

Often very little iodized oil is seen in the trunks of the deep and superficial femoral arteries even when no obstruction is present The terminal vessels in the foot are seen best in roentgenograms taken five minutes after the injection Compression of the injected limb forces the oil out of the vessel

In conclusion the authors state that the procedure described is a harmless method of exploring the blood vessels
C O HEIMDAL M D

Bernheim B M and Sachs L Notes on the Collateral Circulation in Blood Vessel Diseases of the Lower Extremities *Int Surg* 1927 lxxvix 47

It has long been known that the femoral artery may be ligated above the profunda without death of the extremity The collateral circulation probably occurs by way of the gluteal arteries

The authors point out that the vessels of the sciatic nerve in the normal limb are small and not easy to demonstrate while any disease condition which produces obstruction of the main vessels is associated with enlargement and hypertrophy of the sciatic vessels out of all proportion to the size of the nerve

The article reports seven cases in which amputation was done below the mid section of the thigh for gangrene due to different types of constitutional disease In every instance microscopic sections of the sciatic nerve trunks demonstrated an enormous

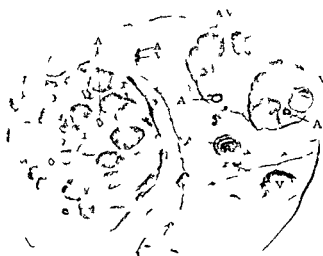


Fig 1 Compensatory enlargement of the arteries accompanying the sciatic nerve in a case of arteriosclerosis complicated by diabetes mellitus

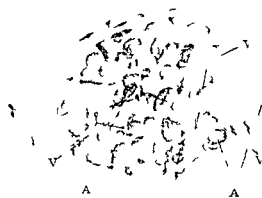


Fig 2 Compensatory enlargement of the arteries accompanying the sciatic nerve in a case of thrombo angustis obliterans

dilation of the sciatic vessels Attention is called to the fact that these vessels were not obstructed by the disease affecting the main vessels

WILLIAM J PICKETT M D

Warthen H J Jr The Fate of Foreign Bodies in the Venous Circulation *J Clin Surg* 1927 xv 712

In the literature there are to be found the reports of cases in which projectiles lodging in the veins have migrated to the heart There is no mention however of the migration of such objects to the lungs

The author inserted sterile and unsterilized metallic bodies into the femoral and jugular veins of fourteen dogs usually inserting seven objects in each animal. Of ninety-four foreign bodies inserted twenty-two were bullets, forty-three were shot and twenty-nine were nails from 18 to 3 mm long. Sixteen of these foreign bodies failed to leave the femoral vein and eleven were found in the iliac vein and venous cava during an opened intrathoracic operation on two dogs dying soon after the insertion of the foreign bodies. Of sixteen objects which reached the heart three (bullet) remained in the right ventricle and six (nail) lodged in the pulmonary artery, the latter being apparently too long to negotiate the curve of the artery. The migration to the heart and lungs appeared to require several hours or days. In the lungs the bodies were usually clumped in two or three branches of the pulmonary artery and the major vessel found in the lower lobes of the left lung.

In no case did immediate symptoms occur. The microscopic change in the lungs ranged from moderate congestion to gangrenous infarction. Appearance to represent late stage of infarction. The lung showed gross changes in only two cases. In one a local edema pleurisy and associated with the presence of sterile bullae. In the other a fatal lung abscess followed the insertion of unsterilized nail but the nail did not lodge in the blood vessel.

In another case the nail lodged in the branch of artery causing a fatal abscess. A full examination led to show that the objects gave access to the tracheal circulation. In the third fatal case two bullets were found at the periphery of the right ventricle. No cause of death except the choking of the endocardium and localized myocarditis could be discovered.

In all three fatal cases unsterilized foreign bodies were used and in two cases the foreign nail. It is therefore apparent that sterile objects in the heart and lungs do little damage that unless one is fortunate and symmetrical rarely cause infection and that unsterilized foreign bodies are the most dangerous. It appears also that highly symmetrical objects such as bullets tend to remain in the heart. As they tend to lodge at the apex of the ventricle which is accessible to surgery their removal is usually feasible. Since objects lodged in the lungs usually cause no trouble operation for their removal is seldom indicated.

LURT V. CLAR, JR. M.D.

Neugebauer F. Gangrene of the Extremities (D. G. G. D. Et m. t. t.) B. I. K. C. I. 97 d. 67 9

When immediate ligation is done because of life threatening hemorrhage in open traumatic injuries of the blood vessels the nutrition of the limb is seriously threatened as there is no time for the development of a collateral circulation. Reports that regard to the frequency of gangrene following involvement of the common iliac artery show some variation because the condition may be complicated by infil-

tration of blood into the tissues infection arterio-sclerosis or cardiac weakness. In very rare cases a break in the continuity of a large venous trunk alone (the femoral vein) may cause gangrene.

In open injuries of the forearm and leg the arteries and the veins should be ligated. Ligation of the subclavian axillary brachial and cubital arteries is also without danger. In the case of the common and external iliac the femoral and the popliteal arteries on the other hand suture should be attempted. In the determination of the collateral circulation the sign of Henle and Coccen is of value. If suture is impossible on account of infection the principal vein must also be ligated.

In open injuries without damage to the artery itself the clinical picture of a break in the continuity of the blood vessel may be produced by traumatic segmental vascular prism. So far it has been impossible to diagnose this condition positively before operation. Segmental vascular spasm rarely results in gangrene.

Occasionally slight trauma such as that produced by a hypodermic needle may be followed by gangrene of an extremity.

Gangrene from subcutaneous injury without demonstrable damage to the blood vessels is rare. This includes gangrene produced by surgical bandages. More common is obstruction of the blood vessels by tearing of the inner vascular membrane by dull injuries and gunshot wounds near arteries. In such cases the vascular murmur often indicates the site of the injury. In fractures gangrene is threatened by pressure on the blood vessels or laceration of the inner vascular membrane or of the entire vascular wall. Because of the marked infiltration of blood into the tissues such vascular injuries have a particularly unfavorable prognosis as they lead to gangrene in from 5 to 100 per cent of the cases according to the site of the injury. Dull injuries may also cause segmental or general vascular spasms.

Senile pre-embolic or spontaneous gangrene and diabetic gangrene have a common cause namely arteriosclerosis. The latter condition occurs not only in old age but also in childhood. Occlusion of the blood vessels leads to proliferation of the vascular walls and secondary thrombus formation. The author relates the symptom. The use of iodine the induction of local hyperæmia and operative section of the nerve supply of the blood vessels may often prevent the development of gangrene. The favorable effect claimed for the removal of one adrenal is doubtful. Th. Wietin anastomosis is of no avail but simple ligation of the veins is said to have a favorable effect in these as in other forms of gangrene. Periaortic sympathetic myositis to be rejected as ineffective and not thought of. When dry gangrene has already developed the level at which amputation should be performed is best determined by the Moskowitz test. The amputation should be as simple as possible. Most gangrene with ascending infection necessitates a high amputation. When amputation is impossible hot air treatment is advisable.

Gangrene due to freezing is caused by a primary injury of the blood vessels. Cold causes changes in the blood vessel walls in addition to stasis. The beginning of gangrene due to cold unlike that of most other forms is painless. General weakness or illness and local changes favor the development of gangrene. In the treatment the limb should be warmed slowly. Quick warming may cause very severe injury. Elevation of the limb, massage and incision are indicated to overcome stasis. When gangrene has already developed the attempt must be made to keep it dry. Moist dressings are contra-indicated.

Embolic gangrene is very severe because it occurs usually in persons with poor heart function. Paradoxical embolism is very rare. The time at which gangrene develops depends upon whether complete occlusion was caused by the embolus immediately or resulted only after secondary thrombosis. The diagnosis is usually not difficult. The treatment tends more and more toward embolectomy. This may still be successful after from ten to thirteen hours. Emboli up to 86 cm in length have been removed. In three cases incision of the aorta was successful. Recurrences are common. A cure results in from 36 to 44 per cent of the cases. Embolic occlusion of the blood vessels is caused more rarely by injuries of the chest and thoracic operations.

Gangrene of the extremities has been observed in nearly all infectious diseases. Gas gangrene is nearly always dependent upon vascular injury. The gangrene following general infection is peculiar in that it generally develops first after the most severe stage of the disease has passed. Its most common causes are thrombosis from toxic arteritis, endocarditic embolism of the main vessels or the vasa vasorum and venous thrombosis. The prognosis is poor as the mortality is 51.6 per cent. Gangrene resulting from syphilis is rare. Occasionally it has the clinical picture of Raynaud's gangrene.

Of the various poisons that may cause gangrene the most important is carbolic acid, but gangrene due to carbolic acid is now seldom seen. It results from marked transudation in the subcutaneous tissues. Lysol acts in the same way, but causes pain early and is therefore less disastrous. Gangrene from carbon monoxide or lead poisoning is the result of an arteritis. The severe ascending necrosis resulting from injuries produced by an electric current are also due to histologically demonstrable changes in the arterial wall.

The suspicion of a neuropathic gangrene (Raynaud's gangrene) demands the exclusion of all other forms. Of diagnostic importance are its periodicity, changes in the eye grounds and the findings of capillary microscopy. The most important agent in the treatment is heat.

KOENIG (Z)

LYMPH VESSELS AND GLANDS

Bernard R. The Surgical Treatment of Cancer of the Cervical Glands (Traitement chirurgical des adenopathies cancéreuses du cou) *J de cl r* 1927
xx 4

As all of the cervical glands are enclosed in a sheath of cellular tissue they can be removed *en bloc* by finding the anatomical planes of cleavage which lie in the spaces that separate the muscles from the perimysium and the vessels and nerves from their adventitia. In cases of cancer removal of the glands should be very extensive even when they are apparently normal. Recurrence of cancer of the mouth and pharynx is generally not a true recurrence but the development of a latent adenopathy. In a submaxillary excision the submental space should be cleaned out and the carotid chain dissected in the space extending from the posterior digastric to the middle tendon of the omohyoid. Removal of the carotid chain should extend to the clavicle, sacrifice the sternocleidomastoid and terminate at the trapezius.

General anesthesia is very unfavorable in operations on the head and neck. The best method is the administration of ether by rectum or of chloroform by Delbet's pipe. The best incision is Morestin's large stellate incision. The two types of operation are submaxillary excision and complete cervical excision. The steps in both of these procedures are shown in illustrations.

The steps of the submaxillary operation are liberation of the maxilla, cellulotomy, beginning along the lower border of the maxilla, liberation of the parotid, exposure of the posterior belly of the digastric, dissection of the anterior digastric and the submental region, dissection of the mylohyoid, ligation of Wharton's duct and the facial artery, dissection of the omohyoid, liberation of the sternocleidomastoid and spinalis, dissection of the internal jugular ligation of the thyrohyoid trunk, dissection of the hyoglossus and ligation of the external carotid. The dissection of the hyoglossus frees the last attachments of the cellular mass which contains the glands.

In total excision of the cervical glands the sternocleidomastoid must be sacrificed whether the glands are adherent or not. The sacrifice of this muscle does not involve any loss of function. The dissection is carried back to beneath the anterior border of the trapezius and terminated at the hyoglossus as in the preceding operation. Even this extensive procedure requires only about three quarters of an hour if it is not complicated by adhesions. Generally it is well borne by the patient in spite of its severity and the wound heals by first intention.

AUDREY G. MORGAN M.D.

SURGICAL TECHNIQUE

OPERATIVE SURGERY AND TECHNIQUE POSTOPERATIVE TREATMENT

Koontz A R D ad (P eserved) Fasci Grafts
J 4 M 1 o 1 3

Nageotte has made some interesting observations concerning that the place after the implantation of living and dead fascial grafts. In the case of living grafts he noted the following phenomena: (1) the attachment of the tissue to that of the host, the ingrowth of fibrils; (2) the development of a neovascular network; (3) the rehabilitation of the cell. I believe that the first two phenomena are true, but in the third stage the dead cell cannot survive and be replaced by living cells from the host. The final result is therefore fatal.

Koontz concludes that since living tendons graft could be used grafts of dead fascia repair also a possibility and might be of value. The repair of lacerations and lacerations are a necessity. It is difficult to find enough fascia for the repair of lacerations. The defect is covered by a fascial flap. He treated with alcohol prepared strips of fascia lata for the purpose.

The experimental animal clinic results indicate that grafts of dead fascia suggest that this material may be used not only for the repair of hernia but also in such procedures as separation of the sternum, the capsules of the elbow joint, the repair of recurrent dislocation of the patella, the ligation of tendons, defects of the operative cure of aneurysm.

It appears that the ordinary absorbable sutures material used in the occurrence of the absorption of a part of the suture tissue which have a permanent living end of tissue in place of the absorbed portion. When alcohol prepared strips of fascia lata are employed as suture material this end result is a certainty and is obtained more quickly because the tissue is absorbed. M R R H K IN MD

ANTISEPTIC SURGERY TREATMENT OF WOUNDS AND INFECTIONS

Leonard V and Feiler W A Hexylresorcinol as a
General Antiseptic S G Gy & Ob 1927
163

Agnes antiseptic for disinfection of tissue and for use should be chemically stable, non-toxic, non-irritating, rapidly bactericidal, highly penetrating, and unaffected by organic matter. Other properties which are very desirable though not essential are freedom from staining action and from an objectionable odor.

As a rule increased germicidal power is associated with increased toxicity and irritating properties.

The alkyl resorcinols however are unique exceptions to this rule as the great increase in germicidal power associated with each increase in the number of carbon atoms in the alkyl chain is accompanied by no increase whatever in toxicity to laboratory animals and the irritant properties of the successive compounds are decreased.

Hexylresorcinol the most powerful member of this series according to the United States Hygienic Laboratory method of measuring germicidal values has a phenolic coefficient of 7. Moreover it is a stable chemical compound since aqueous solutions retain the bactericidal activity after months of standing at room temperature. That it is so toxic is evident from the fact that it can be administered in large doses (6 gm. three or four times daily) for a year or more without causing a marked effect. It is absolutely devoid of irritant properties.

Investigation has revealed also that hexylresorcinol is an extremely powerful surface tension reducer and that its rate of diffusion is unusually high. It has therefore marked penetrating power and will extend into minute crevices and interstices. Glucose added in proportion insures a perfect solution and a rapid action.

The solution finally chosen by the author as best meeting the requirements consists of glucose 30 percent and water 70 percent in which dissolved 1 mgm. of crystals of hexylresorcinol per cubic millimeter.

The bactericidal action of this solution is very rapid. Even in a dilution of 1:10 the solution retains sufficient bactericidal power to destroy the bacteria in less than fifteen seconds. It may therefore be diluted to a concentration of one degree for purposes of irrigation. The presence of organic matter does not interfere with its bactericidal properties.

The solution is usually employed in full strength on the skin in fresh cuts and abrasions, on granulating surfaces in abscesses, etc., and is used in the ear, nose, throat, and mouth. It is used in the bladder and renal pelvis, in the case of one or two parts of water. Diluted solutions of water may be used in the normal conjunctiva.

The solution is as clear as water and odorless. It does not attack any of the heavy metals.

WILLIAM E. SHACK, M.D.

K. H. R. A. The Treatment of Actinopurulent Inflammation with the Roentgen Rays (D. B. H. G. L. K. T. N. E. T. D. B. H. T. G. L. H. D. T. H. Z. H. F. Ch. 9)

539

In inflammation of the sweat gland of the axilla especially in paronychia and lymphangitis but also in

phlegmons carbuncles erysipelas puerperal mastitis and small inflammations of the soft parts roentgen ray irradiation has been found in 80 per cent of the cases to give much better results in a surprisingly short time than any other treatment. The dosage used by the author usually ranged from 4 to 5 per cent of the skin erythema dose and never exceeded 25 per cent of the latter amount. In the majority of cases a normal dose of from 75 to 80 R was given. When it was especially desirable to avoid a stormy reaction a dose of 4 per cent was given at first and increased to the normal dose after a few days. Irradiation was always done with hard infiltration (0.8 mm. of copper plus 2 mm. of aluminum) and a skin target distance of from 35 to 50 cm.

In inflammations of the sweat glands of the axilla three or four irradiations of the same strength were given. For provocatory purposes in the differential diagnosis of inflammations of the glands of the neck the joints and the bones irradiations were carried out according to the procedure of Freund 200 R being applied to the area.

The therapeutic irradiation should be given in the beginning of the stage of exudation. It does not alter the nature of the inflammatory or breaking down process but hastens the subsidence of the inflammation. At the proper time the softened areas must be opened with the knife. In the exudative stage of the inflammation the pain malaise and fever soon cease after the irradiation. In the stage of abscess formation there is usually at first an increase in the swelling and pain which necessitate early incision. In cases of rapidly swelling phlegmons the malaise ceases after a few hours and very often the fever also subsides. The pulse however may remain rapid and when this is the case the local condition is unchanged and opening of the abscess is necessary. Unlike the pus in the cases of Heidenhain and Fried that in the author's cases was usually not sterile.

For stiff walled cavities with a purulent exudate and for empyema of the large joints irradiation is of no avail. In inflammatory conditions of the bones joints and tendon sheaths it is not advisable.

The increase in the severity of the signs of the inflammation immediately after irradiation is attributed by the author to an increase in the hydrogen

ion concentration. This increase is followed by a decrease over a period of days the results of which are indicated by a diminution in the amount of the exudate the infiltration of leucocytes and cessation of the pain. In Kohler's opinion the marked destruction of leucocytes caused by the irradiation frees non specific antibodies (proteolytic ferments) which instead of entering the blood stream build a serological wall around the inflamed area.

HINTZ (Z)

ANÆSTHESIA

Lepoutre C. Permanent Nerve Disturbances Resulting from Spinal Anæsthesia (*Des accidents neux légités de la rraianesthésie*) *Bull et Mé Soc d'et d'ht* 1927 lvi 456

A patient consulted the author on account of incontinence of urine and anæsthesia of the perineal region following an operation for right inguinal hernia under spinal anæsthesia. In Lepoutre's opinion spinal anæsthesia may sometimes result in permanent nervous disturbances. Before the anæsthesia can be blamed however syphilis tuberculosis and nervous diseases must be ruled out.

In some cases there may be paralysis of the lower limbs with incontinence of the sphincters or disturbances limited to one nerve center or root. In others the phenomena may be due to extradural hæmorrhage which compresses nerve centers. Such disturbances are rare and the result of the puncture rather than the anæsthesia. As a rule the complications are attributed to an irritant action of the anæsthetic and vary with its nature and concentration. Sometimes the lesions are so strictly localized as to suggest injury of a nerve center or bundle of fibers by direct puncture destruction by a hæmatoma or dissociation by the intravenous injection of the anæsthetic. In the author's opinion this was the pathogenesis in the case reported.

In spite of the possibility of such complications spinal anæsthesia is indicated when it will improve the prognosis of the operation. As a precaution the injection should not be made until the spinal fluid is flowing normally showing that the needle has been correctly inserted.

AUDREY G. MORGAN M.D.

PHYSICO-CHEMICAL METHODS IN SURGERY

ROENTGENOLOGY

Pfeiffer G The Importance of Vascular Permeability in the Therapeutic Use of Roentgen Rays and Radium in Malignant Disease 1933

A clinical observation and the results of recent experiments have suggested to the author a new theoretical explanation of the healing of tumor following irradiation. The clinical lesion was analyzed from the serologic point of view. The oncotic hypothesis is described in detail. The lead to the deduction that the vascular system plays a role of first importance in the phenomena of healing and that the curative effect of irradiation is brought about by a change in the permeability of the vessels. It seemed probable that the healing was produced directly by a transformation of net colloid rather by the physical production of immuninulation by the roentgen rays or by actual immunity which became activated following the edipmebilty of the blood vessel.

The hypotheses are compared with experimental facts established by a university investigator with regard to the permeability of immunity in lymphatic glands of the capillary microcirculation. The relationship of the vital function of the important tissue of Warburg metabolism. The author attempts to prove that the findings of these different but very all tend to confirm each other that the erythema dose which produces the healing of cancer has the effect of restoring the capillary permeability for certain protective substances.

A result of his studies Pfeiffer believes that the mammography technique should be (1) the general favorable for entering and (2) the dose to a hyperemia and increase of the vascular permeability (3) the specific without production of lesions in the vessel walls (4) the ability of acting subsequent radiation in the healing process (5) the administration of radiation in the administration of the substance capable of stimulating the growth of the tumor (6) the administration of the substance to neutralize the activity of the thyroid gland and (7) the alkalization of the urine.

The peculiar activity of roentgen rays and radium against processes in vasculariology of cancer is explained by the ability of these agents to reduce the capillary permeability for considerate periods and to maintain without producing any effects of a harmful nature. This is a sumption plain also the usefulness of radiotherapy when the tissue adjacent to the

tumor do not possess blood vessels when a new formation of capillaries with the tissues made impossible by natural or pathological conditions and when previous radiation has produced an irreparable impermeability of the vessels.

ADOLF HARTUNG M.D.

Pfeiffer G E and Wdmann B P The Value of Intravenous Injections of Desferrioxamine in the Treatment of Malignant Diseases 1933

The authors were led to make investigations with the intravenous injection of desferrioxamine with a duration of time of malin and disease by a communication from Holzknecht and Mayer in which it is stated that tumor tissue seemed to be rendered more susceptible to radiation when the latter was combined with intravenous injections of a hyperton solution of desferrioxamine. The clinical improvement as a specific therapeutic effect of the desferrioxamine to add to the radiation and that the desferrioxamine seemed to decrease the intensity of the so-called cytotoxic effect of radiation. This treatment as based on general biological and clinical observation of various investigations which demonstrated a close relationship of the morphological and chemical changes.

The method used by the authors is (1) the evaluation of the character and location of the lesion. Both high and low voltage technique as used by the radiation method of Pfeiffer as a diagnostic case adjuvant applied in the majority of the cases freshly prepared 33 percent desferrioxamine solution was injected in quantities of 100 cc before the roentgen ray or radium treatment but in a group of cases the injection of desferrioxamine during the administration of the group immediately after the treatment. After the second or third injection the dose was 150 cc self-stimulated 5 cc and then rapidly brought up to 100 cc. In these cases 25 cc ceg was injected on injection. In every instance daily injections of 100 cc of desferrioxamine were given for 10 to 15 days following the administration.

In the following cases reported as the early improvement in the treatment of the lesion while the desferrioxamine treatment the symptoms of the radiation sickness were minimized. The effect of the desferrioxamine was most favorable. However, the relief was directly noticeable and permanent in a few instances. The author believes that intravenous injections of desferrioxamine are just indicated in cases in which the patients do not respond to the treatment.

ADOLF HARTUNG M.D.

MISCELLANEOUS

CLINICAL ENTITIES—GENERAL PHYSIOLOGICAL CONDITIONS

Campbell M F The Etiology of Granuloma Inguinale with a Report of Eighteen Cases *Am J Med Sc* 97 clxiv 670

Granuloma inguinale has been definitely established as a clinical entity. It is a disease to which negroes seem to be predisposed, whites are rarely attacked by it. It is most common in the subtropics but the authors have seen it in persons who have never been outside of New York.

It begins as a small moist papule located usually in the genital or perigenital regions. This papule undergoes progressive ulceration. The condition seems to be transmitted by clothing and friction. It is in no sense a venereal disease. There is a notable absence of pain and adenopathy.

Granuloma inguinale must be differentiated from chancre, chancroid, gumma, tuberculosis and malignancy.

It was first described by Convers and Daniels in 1895. Its etiology is uncertain. Convers and Daniels thought it to be tuberculous and others have classified it as luetic. In 1905 Donovan described peculiar ovoid inclusions within the large mononuclear cells present to which his name has been given. Donovan believed that these bodies were of protozoan origin and the etiological factors of the disease. From direct transplantation of infected tissue to a healthy individual and the isolation of Donovan bodies from the new lesion McIntosh arrived at the same conclusion. While these bodies may have been the cause, the transplantation of a tissue *en masse* precludes any conclusions as to their specificity; other organisms as yet not isolated may have been transplanted at the same time.

The Donovan bodies are isolated by Sabouraud's medium (4 per cent maltose peptone agar). When once isolated they grow well on the more common laboratory media. They range in size from 1 to 5 micra. The smallest have the appearance of cocci. The largest are ovoid or oblong. Pleomorphism is characteristic. They do not form spores and are not motile.

In order to determine the specificity of the organism the author made direct inoculations of twenty-four hour cultures into guinea pigs, rabbits, monkeys and human beings. In no instance did these inoculations produce a lesion characteristic of granuloma inguinale but in all cases there were formed superficial abscesses from which Donovan bodies were isolated as early as the first week.

Tartar emetic (potassium antimony tartrate) given intravenously in a 1 per cent solution is a specific remedy. As a rule the treatment is begun

with 2 c cm of the 1 per cent solution and the dose is increased by 1 c cm every other day. Rarely has it been necessary to give more than 10 c cm at one time. The improvement in the lesion is as striking as that observed in superficial luetic manifestations under treatment with arsphenamine. The injections should be continued for some time after the apparent cure of the disease as relapses have been known to occur when they were discontinued immediately after the disappearance of the lesions.

MARSHALL DAVISON, M.D.

Coley W B The Prognosis and Treatment of Giant Cell Sarcoma *Ann Surg* 197 lxxvii 641

This article is based on a careful follow up of fifty cases of giant cell sarcoma of the long bones reported in November 1923 and nineteen additional cases observed since then.

Coley states that while the majority of giant cell sarcomata are benign or only locally malignant there are a certain number which give rise to metastases and generalization of the disease. In the early stages of the condition it is quite impossible to differentiate the malignant from the benign. In the first series of fifty cases of giant cell sarcoma of the long bones in which a diagnosis was made by competent pathologists there were ten deaths from metastases. Collected records of the New York Presbyterian and Bellevue Hospitals show the same incidence of malignancy in cases diagnosed as giant cell sarcoma. The malignant nature of some of these cases has been reported also by numerous observers.

The usual method of treating giant cell sarcoma is curettage followed by the use of carbolic or zinc chloride. Hemorrhage is a serious complication. The treatment of the cavity is unsettled. Some surgeons follow Bloodgood's method of packing the cavity while others try to close the wound completely. Coley packs whenever necessary and keeps the wound clean with Dakin's solution.

In addition to curettage and the application of carbolic or zinc chloride to the cavity, the injection of mixed toxins of erysipelas and bacillus prodigiosus for a period of three or four months greatly lessens the chances of recurrence of the disease by destroying whatever cells have been left behind. When the toxin is used for prophylaxis only small doses are given just enough to cause a mild reaction.

There is an increased tendency on the part of surgeons to turn all cases of bone sarcoma, especially giant cell sarcoma, over to the radiologist but the number of cases treated by radiation is still too small and the period of observation is still too short to permit the conclusion that radiation is the method of choice. Disadvantages of radiation as the pri-

mary method of treatment are the possibility of error in the diagnosis and the long duration of the treatment. The result obtained by a combination of curettage and irradiation is distinctly inferior to the one obtained by a combination of surgery and to the one obtained by WILKINSON'S METHOD.

W L I M E S H A C L T M D

GENERAL BACTERIAL PROTOZOAN AND PARASITIC INFECTIONS

II den R L Th Etiology of Focal Inf t on
Medical Asp cts 1, Of l Rl l c Ld v g l
07 856

The first requisite in the management of focal infection is a general examination of the patient. The symptoms often ascribed to focal infection may be due to entirely different causes.

In the a t major t of c es the f ci are fou d:
the teeth to ils o use

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l t i m e E r a d i c a t i o n of the f i m a y a u l l i t l

When the removal of foci and catecholamines is possible, foci should be removed.

The experimental and clinical trial of folic acid
treatment emphasize the important role of folic acid

systemic disease and the need for early recognition and removal of foci before systemic disease has resulted. JOHN J. M. LOFF, M.D.

Bergl aus n O Torula Infection n Ma 4
I t M d 9 7 35

To the twenty four cases of infection by the yeast organism *Candida albicans* which are reported in the literature the author adds a case with involvement of the tongue. In the latter a state of hypersensitivity was indicated by a marked skin reaction following the subcutaneous injection of a bacterial aqueous extract of a culture of the organism. Complications in the form of a mottled infiltration of the parenchyma of the lungs and enlargement of the spleen developed.

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APRIL, 1928

International Abstract of Surgery

Supplementary to
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CONTENTS

I Index of Abstracts of Current Literature	iii
II Authors	ix
III Editor's Comment	x
IV Abstracts of Current Literature	259-317
V Bibliography of Current Literature	318-344

CONTENTS—APRIL, 1928

ABSTRACTS OF CURRENT LITERATURE

SURGERY OF THE HEAD AND NECK

Eye

FENTON P. A. The Differentiation Between Ophthalmic and Sinus Headaches 259

GOVE E. L. Glaucoma Following Obstruction of the Central Vein of the Retina 259

LEWIS F. P. A Non Operative Treatment of Inflammatory Glaucoma 59

GRADLE H. S. A Conjunctival Drain of the Anterior Chamber An Operative Technique Used in Absolute Glaucoma 259

FOX L. W. Congenital Cataract A Plea for Variety in Its Surgical Treatment 60

PARAER W. R. Cataract Extraction The Comparative Results Obtained by the Combined Simple and Knapp Torok Methods of Procedure 260

DUNPHY F. B. Loss of Vitreous in Cataract Extraction 60

ROUNF H. The Different Types of Defects of the Field of Vision 60

LITOPAVVA J. Photography of the Eyeground 260

BEDELL A. J. A Photographic Study of Holes Occurring in the Macular Region and Associated Changes 61

LISTER SIR W. T. Some Points in Connection with Detachment of the Retina 261

LAWSON SIR A. The Value of Antiseptics in Modern Ophthalmic Surgery 61

VAN HEUVEN J. A. Some Remarks on Lagrange's Surgical Treatment of Detachment of the Retina 261

OLIVER K. S. and CROWE S. J. Retrobulbar Neuritis and Infection of the Accessory Nasal Sinuses 261

SWIFT G. W. Choked Disk in Intracranial Lesions the Mechanical Factor in Its Causation 267

Ear

LAMAN H. W. The Otolaryngological Phase of Focal Infection 262

MACKENZIE C. W. Suppurative Labyrinthitis with a Report of Cases 26

LAMAN H. W. Infantile Mastoiditis with Gastrointestinal Symptoms 26

SHUSTER B. H. Intracranial Complications of Otic Origin with Reference to Diagnosis and Management 67

Nose and Sinuses

FINTON R. A. The Differentiation Between Ophthalmic and Sinus Headaches 259

SCHMIEGELOW F. Clinical Remarks on the Use of Surgical Diathermy for Malignant Tumors in the Anterior Air Passages 63

DEAN L. W. The Influence of Paranasal Sinus Infections in Infants and Young Children upon Certain Systemic Conditions and the Influence of Certain Systemic Conditions in Infants and Young Children upon the Method of Treating Co-existing Sinusitis 263

EMERSON F. P. The Varying Symptomatology of Chronic Maxillary Sinusitis Depending on the Pathology Present 63

Neck

RIENHOFF W. F. JR. Hyperthyroidism and Its Relation to Benign Tumors of the Thyroid Gland 64

ELSE J. E. Regeneration of the Thyroid Gland and the Prevention of Recurrent Goiters 264

SIMON F. Heart Block After Goiter Operations 65

THOMSON SIR St. C. Larynx offshoot for Intracranial Carcinoma of the Larynx Four Cases in Medical Men Who Are Now in Active Practice Two and a Quarter Three Four and a Half and One and a Half Years After Operation 266

COLLENDER L. Laryngectomy in Cancer of the Larynx 66

SURGERY OF THE NERVOUS SYSTEM

Brain and Its Coverings Cranial Nerves

CREYN and LOUBAT. Indirect Injury of the Brain Treated by Trephination One and One Half Years Ago Retrospective Diagnostic Considerations 267

SWIFT G. W. Choked Disk in Intracranial Lesions the Mechanical Factor in Its Causation 67

SHUSTER B. H. Intracranial Complication of Otic Origin with Reference to Diagnosis and Management 267

GRANT F. C. The Indications for and the Technique of Ventriclelography 68

SOSMAN M. C. Radiology as an Aid in the Diagnosis of Skull and Intracranial Lesions 68

PEFT M. M. Pituitary Adamantinomata A Report of Three Cases 269

PEAVHILL W. Chronic Meningeal (Post Traumatic) Headache and Its Specific Treatment by Lumbar Air Insufflation Encephalography 270

Spinal Cord and Its Coverings

HERRMANN L. G. A Bullet Free in the Spinal Canal 270

GYNECOLOGY

- Uterus**
- ODENTAL W Dangers of Uterosalingography 290
FRONTICELLI E Tertiary Syphilis of the Uterus and Adnexa 290
CUIZZA T Tests of the Virulence of Streptococci in the Treatment of Cancer of the Uterus 290
POMEROY L A Five Year End Results of Radium Treatment in Carcinoma of the Cervix Uteri 291

Adnexal and Peruterine Conditions

- RUBIN I C Rhythmic Contractions and Peristaltic Movement in the Intact Human Fallopian Tube as Determined by Peruterine Gas Insufflation and the Kymograph 291
FRASEP J R The Ovary in Osteomalacia 92
DALLFRA N A Cyst of the Ovary Diagnosed as a Fibromyoma of the Uterus 92

External Genitalia

- PUCCIONI L Histological Changes in the Vagina in the Different Phases of the Functional Cycle of the Ovary 292
TURNER S H D Ureterovaginal and Vesicovaginal Fistulae Combined 293

Miscellaneous

- BOVNEY V Gynecological Considerations in Chronic Appendicitis 283

OBSTETRICS

Pregnancy and Its Complications

- NORDIO A Some Cases of Perforation of the Uterus 294
HOROWITZ E A and KUTNER T T The Blood Bilirubin in Ectopic Pregnancy 94
BIERENDEMPFEL PLICK F Repeated Extra Uterine Pregnancy on the Left Side 294
HISSELBLATT R Repeated Pregnancy in the Same Tube Two New Cases 294
KUNZ H On the Pathology of the Umbilical Cord 295
CORWIN J and HERRICK W W The Toxemias of Pregnancy in Relation to Chronic Cardiovascular and Renal Disease 295
BENNETT R The Present Status of Our Knowledge Regarding the Toxemias of Pregnancy 295
RUCKER M I The Treatment of Eclampsia with Natrium Sulphate 296
BROTHA The Indications for the Interruption of Pregnancy 96
SPRECHER The Induction of Abortion in Syphilis 297

Labor and Its Complications

- DAVIS C H The Evaluation of Methods in Obstetrical Analgesia and Anesthesia with Special Reference to Gas Oxygen 297
ZARATE H Partial Symphysiotomy as Compared with Cesarean Section in Contracted Pelvis Twenty Cases of Partial Symphysiotomy 297

Puerperium and Its Complications

- FRUINSCHOLZ A Early Retroversion of the Uterus After Delivery 298
BRUEGELMANN C Observations on Puerperal Sepsis Particularly the Localization and Frequency of Metastases 298
WEINZIERL C Total Gangrene of the Uterus During the Puerperium 299

Miscellaneous

- KOSMAK G W The Results of Supervised Midwife Practice in Certain European Countries Can We Draw a Lesson from This for the United States? 99

GENITO URINARY SURGERY

Adrenal Kidney and Ureter

- CORWIN J and HERRICK W W The Toxemias of Pregnancy in Relation to Chronic Cardiovascular and Renal Disease 295
LEE BROWN R K and LAIDLEY J W S Pyelovenous Backflow 300
BELCHER G W Renal Distortion Its Relation to Nephrosis 300
GOTTLIEB J G Crossed Renal Dystopia 300
ANTONUCCI C and CASSUTO A Cases of Pseudo-Ureteral Anomalies 300
CORBUS B C Pyelonephritis and Its Relation to Non Gonorrheal Urethritis 301
EISENDRATH D N The Indwelling Ureteral Catheter in the Treatment of Pyelonephritis and Other Renal Conditions 301
HUBLEUR M The Indocarmine Test as a Method of Diagnosing Renal Tuberculosis 301
SERRA E IBARRA A Review of Ectopic Fetal Nephrectomies for Renal Tuberculosis 301
GOTTLIEB J The Early Diagnosis of Pelvic Tumors 302
DÓZSA F Further Observations on Uterine Tumors of the Renal Pelvis and the Ureter 302

Bladder Urethra and Penis

- MARION and CHEVASSU Another Case of Congenital Hypertrophy of the Urethra and Urethral Derivatives 92
CRAIG G and BROWN R K L The Pathology of Epithelial Bladder Tumor 303

SURGERY OF THE BONES JOINTS MUSCLES TENDONS ETC

- Conditions of the Bones Joints Muscles Tendons Etc 96
BLUMENFELDER W C and KERN P Experimental Obstructive Jaundice I General Factors in Defective Calcification 2
FRASER J R The Ovary in Osteoporosis 9
ALBEE F H Myofascitis Aponeurotic and Fibrous of Many Apparently Different Conditions 304
KANAVEL A B The Dynamics of the Hand with Considerations of the Position of the Hand by Spinal 304

BIBLIOGRAPHY

Surgery of the Head and Neck

Head	318
Eye	318
Ear	319
Nose and Sinuses	320
Mouth	320
Pharynx	320
Neck	321

Newborn	333
Miscellaneous	334

Genito Urinary Surgery

Adrenal Kidney and Ureter	334
Bladder Urethra and Penis	335
Genital Organs	335
Miscellaneous	335

Surgery of the Nervous System

Brain and Its Coverings Cranial Nerves	321
Spinal Cord and Its Coverings	322
Peripheral Nerves	322
Sympathetic Nerves	322
Miscellaneous	322

Surgery of the Bones Joints Muscles Tendons

Conditions of the Bones Joints Muscles Tendons	
Fits	336
Surgery of the Bones Joints Muscles Tendons Etc	337
Fractures and Dislocations	338
Orthopedics in General	339

Surgery of the Chest

Chest Wall and Breast	323
Trachea Lungs and Pleura	323
Heart and Pericardium	323
Esophagus and Mediastinum	324
Miscellaneous	324

Surgery of the Blood and Lymph Systems

Blood Vessels	339
Blood Transfusion	340
Lymph Vessels and Gland	341

Surgical Technique

Operative Surgery and Technique Postoperative Treatment	341
Antiseptic Surgery Treatment of Wounds and Infections	341
Anæsthesia	342
Surgical Instruments and Apparatus	342

Surgery of the Abdomen

Abdominal Wall and Peritoneum	324
Gastro Intestinal Tract	325
Liver Gall Bladder Pancreas and Spleen	327
Miscellaneous	328

Physicochemical Methods in Surgery

Roentgenology	342
Radium	343
Miscellaneous	343

Gynecology

Uterus	329
Adnexal and Peruterine Conditions	329
External Genitalia	330
Miscellaneous	330

Miscellaneous

Obstetrics

Pregnancy and Its Complications	331
Labor and Its Complications	33
Puerperium and Its Complications	333

Clinical Entities—General Physiological Conditions	343
General Bacterial Protozoan and Parasitic Infections	344
Surgical Pathology and Diagnosis	344
Experimental Surgery	344
Hospitals Medical Education and History	344

AUTHORS

OF THE ARTICLES ABSTRACTED IN THIS NUMBER

- Albee F H 304
 Andrei O 308
 Antonucci C 300
 Bedell A J 261
 Belcher G W 300
 Beller A J 279
 Benda R 293
 Bierendempfel Pleck F 94
 Bonney V 283
 Boothby W M 273
 Bristow W R 305
 Brouha 96
 Brown G E 311
 Brown R K L 303
 Bruegelmann C 298
 Buchbinde J R 275
 Buchbinder W C 287
 Burden V G 288
 Caorsi L J 83
 Capps J A 274
 Calett J B 284
 Carp L 313
 Cassuto A 300
 Charbonnel 282
 Chevassu 302
 Clark S L 7
 Coffey R C 86
 Colledge I 266
 Collins L 317
 Corbus B C 3
 Corwin J 95
 Craig C 303
 Creyck 267
 Crowe S J 261
 Cryderman W J 280
 Cuizza T 270
 Cutler C W Jr 85
 Dallera N 92
 Davis C H 97
 Dean L W 263
 Delrez L 279
 Dowden J W 283
 Dósa F 302
 Dunphy F B 260
 Lisendrach D N 301
 Else J F 264
 Fly L W 309
 Emerson F P 263
 Farmer H L 31
 Fenton R A 259
 Fox L W 60
 Fraser J R 292
 Fonticelli L 90
 Fruhnsholz A 298
 Fulde E 288
 Furniss H D 293
 Ghedini A 86
 Cinzburg I 79
 Goar E I 259
 Gordon Watson Sir C 286
 Gottlieb J 302
 Gottlieb J G 300
 Goyena J R 283
 Gradle H S 259
 Granger F B 315
 Grant F C 268
 Grasmann M 310
 Hegora H 311
 Handley W S 272
 Hasselblatt R 294
 Hatcher R A 313
 Henderson M S 311
 Herrck W W 95
 Herrmann L G 270
 Hertzler A E 316
 Hirsch I S 273
 Horowitz E A 294
 Hubleur M 301
 Humphreys I B 313
 Ingebrigtsen R 306
 Jaffe H L 305
 Johnson H L 76
 Kanavel A B 304
 Kern R 87
 Key Aberg K 279
 Koch J 281
 Kosmak G W 99
 Kunze H 29
 Kuttner T T 94
 Laewen A 306
 Laidley J W S 300
 Lawson Sir A 261
 Lee Brown R K 300
 Leone P 87
 Lewis F I 259
 Lijb Pav a J 260
 Lion G 316
 Lister Sir W T 26
 London Medical Society 272
 Ioubat 267
 Lusskin H 30
 Lyman H W 262
 Mackenzie G W 62
 Marion 30
 McFarland J 7
 McQueen J M 287
 Melaney I L 313
 Moersch H J 273
 Morris n I I 73
 Moutier F 76
 Nordio A 94
 Nordmann O 277
 Odenthal W 290
 O'Donovan W J 35
 Oliedona H 310
 Oler K S 61
 O'good P B 309
 Parker W R 260
 Paterson D 73
 Peet M M 69
 Penfeld W 70
 Pfab B 308
 Pieri C 289
 Platou I S 317
 Lomeroy I A 9
 Porcel I 26
 Pouet I 307
 Puccinelli V 79
 Puccioni I 202
 Pihhoff W I J 4
 Ronne H 260
 Rubin I C 29
 Rucker M I 96
 Schaefer W 35
 Schlutz F W 3
 Schmiede A 81 28
 Schmiegelow I 63
 Sequeira J H 35
 Serseibar 301
 Short A R 278
 Shuster B H 67
 Simon I 265
 Sonnenschein H 303
 Sosman M C 68
 Sprecher 97
 Sprengell H 89
 Sift C W 267
 Thomson Sir St C 66
 Totter W 83
 Ullmann H J 316
 Van Heuven J A 26
 Verbruyck J I Jr 88
 Walton A J 83
 Weinlel F 299
 Wsthues H 81
 Wilke D P D 8
 Zadek I 305
 Zarate H 29

EDITOR'S COMMENT

OF the unexpected catastrophes that occur from time to time in the practice of surgery none is more tragic than the development of a fatal wound infection after a simple operation in a clean case. Two years ago Melencz called attention to the relation between postoperative hæmolytic streptococcus and infections and hæmolytic streptococcus carriers among operating room personnel (*SURG. GYN&C & OBST.* 1916 *xliv* 338) and in a later paper (*J. Clin. Med.* 1927 *lxxxviii* 1332) showed that there is a seasonal incidence of hæmolytic streptococci in the nose and throat which reaches its height during March, April and May and tends to recede during the succeeding months. The same investigator and his associates have rendered the surgical profession a great service by their careful study of a fatal case of postoperative wound infection (p. 31) which, as eventually shown to be due to a hitherto undescribed anaerobic bacillus of the gas gangrene group, identical in its cultural and other characteristics with an organism recovered from the *chronica ulcra* in use at the hospital during the period in which the patient was operated upon. The occurrence of such postoperative complications is not limited to one hospital or one section of the country, but it is not often that the source of the infection is ascertained with certainty and that the facts are given in the publicity they deserve.

With reference to the occurrence of streptococcus wound infections Melencz says (loc. cit. p. 338). "In the meanwhile (until this investigation could be completed) the operating staff practised very careful masking of both nose and mouth. Not a single case of postoperative wound infection with the streptococcus hæmolyticus has since occurred (a period of six months)." In a footnote he adds that subsequently the development of another case led them to mask not only sterile assistants but everyone entering the operating room with the result that no other streptococcus infection developed.

In spite of this careful investigation and convincing demonstration of cause and effect there are many operating rooms in which only small mouth pieces are furnished for the sterile assistants with the result that their noses are completely uncovered. In the same operating rooms assistants, orderlies, internes and visiting doctors

come and go with no pretense of keeping their faces masked. To omit precautions which are so simple and easy to carry out seems little short of criminal negligence, particularly at the seasons of the year when the incidence of hæmolytic streptococci in the nose and throat is known to be at its highest.

In connection with the above Guizzas discussion of virulence tests of the streptococci present in cancerous ulcers preliminary to radical operation for cancer of the uterus is of especial interest. This question has received particular attention in European clinics (Pribram *F. Zentralbl. f. Chyng.* 1916 *l* 137; Fuss *E. M. Ibid.* 1926 *l* 140; *INT. ABST. SURG.* 1926 *xliv* 400-401) and although there is a considerable divergence of opinion among different workers on the subject the majority agree that utilization of virulence tests will help reduce the number of patients subjected to radical operations and to radium treatment when the presence of virulent streptococci makes even the simplest operative procedure a serious risk.

Nordmann's paper on corrective surgery following unsuccessful operations upon the stomach (p. 277) is an interesting contribution upon one of the most frequently discussed questions of gastrointestinal surgery. Of particular interest is the fact that of twenty-seven secondary operations the corrective operation in four cases consisted of pylorotomy with preservation of the gastro-enterostomy and in four other cases of separation of the intestines from the stomach without further surgical treatment. All of these eight cases were followed by cure. Of eleven other cases subjected to radical operation (Billroth I in eight cases, Billroth II in three cases) all were cured and in every one of them the severely removed portions of the stomach showed a severe gastritis.

Pomeroy's report of the five year end results of radium treatment of carcinoma of the cervix (p. 291), Piab's discussion of the operative treatment of pseudarthroses (p. 308) and Hatcher's report to the Council on Pharmacy and Chemistry of the American Medical Association upon the rectal administration of ether and oil in surgery and obstetrics (p. 313) are a few of many other interesting abstracts in this month's issues of the INTERNATIONAL ABSTRACT OF SURGERY.

INTERNATIONAL ABSTRACT OF SURGERY

APRIL 1928

ABSTRACTS OF CURRENT LITERATURE SURGERY OF THE HEAD AND NECK

EYE

Fenton R A The Differentiation Between Ophthalmic and Sinus Headaches 1 *Otol Rhinol & Laryngol* 927 xxxvi 1 00

Fenton reviews the development distribution and physiology of the cerebrospinal nerves of sensation and discusses the various normal and pathological factors exerting an influence upon the e nerves

He states that in the differentiation between ophthalmic and sinus headaches the patient's personal and family history the frequency of recurrence of the headache the patient's occupation and his exposure to irritants including climatic influences must be taken into consideration The examination should include a search for obstruction to nasal drainage nasal injuries inflammation and oedema septal and turbinal malformations allergic and toxic nasal neoplasms interference with the circulation and lymphatic drainage of the eye ocular inflammations and oedema an increase of ocular tension changes in the media changes in the retina and nerve insufficiency of the ocular musculature and refractive and accommodative errors

The particular group of nerves which is irritated must be determined When these are placed at rest the headache will be stopped or at least relieved temporarily Such rest may be effected by local ischaemia or anaesthesia and the avoidance of specific irritants and irritating tasks

The headache may be central in origin with symptoms referred to the eye or nose It may or may not be relieved by local measures Eye or nose symptoms may be diagnostic of a cerebrospinal cardiovascular gastro intestinal or renal ailment Headache may be psychic with symptoms referred to the eye or nose

It must be borne in mind that ocular and sinus headache may exist at the same time and that degenerative general disorders may increase slight ocular deterioration or nasal stasis into relatively serious complications

LESLIE L MCCOY M D

Goar E L Glaucoma Following Obstruction of the Central Vein of the Retina 1 *J Ophth* 1927 x 3 5 906

In the case reported by the author the glaucoma developed eighty two days after the thrombosis Medical treatment was tried but was unsuccessful A month after the onset of the condition the eye was enucleated At that time the blood pressure was high the blood showed chloride retention and a peripheral abscess of one tooth was found The tooth was removed When the patient was placed on a salt free diet the arterial hypertension and the hemorrhages ceased

The pathological report on the enucleated eye is given The essential changes were found in the media and intima of both arteries and veins in the retina The choroidal vessels were markedly thickened and congested

THOMAS D ALLEN M D

Lewis F P A Non Operative Treatment of Inflammatory Glaucoma *J Am W Ass* 1927 1 x x 2022

The author emphasizes the importance of light and heat in the treatment of hypertension particularly that associated with acute congestive conditions In combination with the dry radiant heat of an electric bulb he uses a glycerin solution and frequently foreign protein and dionin

He states that such treatment results in the relief of pain and a moderate reduction in the tension

THOMAS D ALLEN M D

Gradle H S A Conjunctival Drain of the Anterior Chamber An Operative Technique Used in Absolute Glaucoma *J Im W Ass* 1927 xxxv 025

In the operation described in this article a tongue of conjunctiva is introduced into the anterior chamber to serve as a drain So far Gradle has used the procedure only in absolute glaucoma In this condition it has given exceptionally good results

THOMAS D ALLEN M D

F x L W Congenital Cataract A Plea for
 Var ety n It Surg cal T e tm nt J A W
 1 9 7 1 49
Parker W R Cata t A t action The Com
 parat R ults Obtain d by the Comb ned
 Simple and Kn pp Torok Meth ds f P o
 ced u J 1 W 4 0 7 1 5
Dunphy E B Loss of Vitreous in Cataract Ex
 t a t on J 4 W 1 97 lxxxi 54

Fox states that when the periphery of the lens is clear in congenital cataract he does a small optical iridectomy in the nasal side of each eye (cataract usually bilate l) placing it so as to permit perfect binocular fixation. This is done under general anaesthesia. When capsular remnants persist after previous needlings he removes the remnants by gentle tract on through a corneal incision. He states that removal of the lens is tactically ideal but not always practical.

PARKER review 300 cases of senile cataract with regard to the complication of delirium after the combined simple and Knapp techniques. One hundred cases were treated by each method. The complications were usually defect loss of vision, the formation of a secondary cataract, ataxia, and delirium.

The best visual results were obtained by the combined method. Loss of vitreous occurred more frequently in the Knapp technique. Spontaneous hemorrhage occurred in 1 instance—a case in which the combined method was employed. Prolapse of the iris occurred in 3 per cent of the cases—6 in which the simple technique was used and 4 in which the Knapp procedure was employed. Panophthalmitis developed once following the simple technique and once after the Knapp method. Secondary cataracts were most frequent after the use of the simple technique and least frequent after the Knapp technique. The incidence of astigmatism was the same in the cases treated by the combined and the Knapp procedures. Delirium occurred in 3 cases, which were treated by the combined technique and in 1 case in which the Knapp procedure was used.

Parker concludes that in selected cases the simple or Knapp Torok method of extraction may give as good results as can be obtained with the combined method in unselected cases. He believes that in selected cases the combined method would give the best results and that this procedure is undoubtedly the safe one.

DUNPHY reports 560 cases of cataract extraction with the object of classifying the complication with the several types of operation and determining whether loss of vitreous makes any considerable difference in the ultimate results. The complications were prolapse of the iris, infection, inflammation, hemorrhage and loss of vitreous.

The simple procedure 13 cases—9 treated by combined method and 4 treated by simple method. Infection followed in 13 cases treated by combined method and 4 treated by the

operation. Expulsive hemorrhage resulted in 4 cases after the use of the combined method and in 1 case after simple extraction. There was loss of vitreous in 15 cases (8.3 per cent). It occurred in 7.1 per cent of the cases treated by combined extraction, 0.67 per cent of those treated by simple extraction, and 18.8 per cent of those in which the intracapsular technique was used. Of the 215 patients with loss of vitreous only 74 returned for examination a year or longer after the operation. In 50 the acuity of vision was poor and in 6 the treatment had completely failed.

Dunphy concludes that loss of vitreous would occur much less frequently if every eye with cataract were properly anesthetized by means of the Lantana inject on combined with either a deep orbital or a subconjunctival injection. His records show that of the cases with loss of vitreous 62 per cent were operated upon before this practice was adopted.

G O C E R McVULIFF MD

Renne H The Different Types of Defects of the Field of Vision J A W A 9 7 1 xi 86

Renne. Among the most frequent and characteristic types of defects of the field of vision is the so-called defect in the bundle of nerve fibers which arises as a consequence of the course of the nerve across the retina. From the nasal half of the papilla they extend radially, hereafter from the upper and lower edge they tend in large curve backwards behind the macula.

The peripheral bundles of nerve fibers meet in the temporal part of the retina. The horizontal meridian is a rectilinear line which from the macula extends quite out to the temporal margin of the retina.

He describes in detail and illustrates the various defects of the field of vision caused by injury or pathological conditions breaking the continuity in the course of the nerve fibers.

The defects in the nerve bundle occur in a great number of diseases. They are to be noted most frequently in glaucoma. The defect in the visual field always has its origin in all of the glaucomatous excavations.

Other conditions discussed are optic neuritis, vascular defects, and conditions resulting from arrangement of fibers. The author explains how the defects in the field are produced by these various abnormalities.

LESLIE L McCOW MD

Lijo P J Photography of the Eye and
 (L f t f f d f f d d j j) R d p l
 9 7 358

Bedell A. J. A Photographic Study of Holes in the Macular Region and Associated Changes
1m J Ophth 19 7 35 890

Bedell says We are not unmindful of the fact that an actual hole in the macula has not been demonstrated pathologically but there are many reasons for this the most important one being that eyes so affected are seldom subjected to pathological section He reminds us however that depressed areas are known to occur and he includes in his article several photographs of a number of such areas with and without surrounding pathological changes

THOMAS D. ALLEN M.D.

Lister Sir W. T. Some Points in Connection with Detachment of the Retina
B. M. J. 19 7 1 1127

Lawson Sir A. The Value of Antiseptics in Modern Ophthalmic Surgery
B. M. J. 19 7 1 1128

LISTER urges more thoroughness of examination in cases of retinal detachment including the use of the slit lamp and more rational treatment In general in this condition the retina is dragged in pushed in or floated in When it is dragged in by cicatricial bands as in retinitis striata treatment is of little avail When it is dragged in by vitreous bands division of the bands is beneficial but if the vitreous is fibrous treatment is useless Exudative cases with fluid poured into the interretinal space are at times amenable to medical or surgical treatment alone or combined When the retina is floated in by fluid passed through holes in it treatment is not apt to be successful

If treatment is instituted it should be thorough and include rest in bed constitutional treatment and measures to remove interretinal exudates such as mercury inunctions the use of potassium iodide the application of blisters to the temples and subconjunctival injections Surgically a scleral puncture is indicated

LAWSON discusses asepsis of the ophthalmic field from the standpoint of the conjunctival sac the instruments and dressings the surgeon's fingers and the lish area

The normal sac is in itself aseptic and requires no preliminary treatment but before operation the surgeon must assure himself that the sac is healthy and free from discharge A simple method of determining whether the eye is free from discharge consists in placing a pad over it for a few hours When a discharge is present measures must be taken to remove it before operation is undertaken

Contamination from instruments is now a negligible factor Contamination from the handling of instruments can be prevented by frequent washing of the hands with alcohol and care to avoid handling that part of each instrument which touches the eye To prevent infection from sutures the author recommends the instillation of a 1:1000 solution of flavine when the stitches are put in and twice daily thereafter To prevent or decrease infection from

the lish area he uses flavine or a 2 per cent solution of protargol

GEORGE P. McVULFIR M.D.

Van Heuven J. A. Some Remarks on Lagrange's Surgical Treatment of Detachment of the Retina
Brit J Ophth 1927 vi 593

Van Heuven discusses an operation to which the name colmatage has been given In this procedure a triple row of punctures is made with the galvanocautery or the thermocautery in the sclerotic coat after the conjunctiva has been loosened around the cornea The conjunctiva is then sutured in place In practically every case of detachment of the retina the intra ocular tension is lowered After colmatage the pressure is increased and the detached retina is pressed down against the wall of the eye According to Lagrange the increase in pressure after the operation is due to the formation at the cauterized spot of a constricting ring where the fluid of the eye normally escapes

Favorable results cannot be expected from colmatage in cases of detachment of long standing cases with extreme myopia or cases in which the lens is absent In traumatic detachment of the retina in normal eyes colmatage is more favorable than conservative therapy Although reattachment may occur under treatment with rest in bed bandaging the use of atropine etc relapses almost always occur in such cases Colmatage never has an injurious effect

To determine the cause of the increase in intra ocular pressure after colmatage the author performed a number of experiments on rabbits Estimations of the percentage of albumin in the fluid of the anterior chamber indicated that one factor is an increase in the albumin content Other factors are the vascular dilatation produced by the stimulus applied to the wall of the eyeball around the cornea and the constricting ring produced by the operation which impedes the discharge from the eyeball

Van Heuven states that the condition existing in detachment of the retina may be conceived of as follows

In a space filled with liquid—the eyeball—a partially detached membrane is suspended The membrane is therefore surrounded on both sides by liquid Pressure on one part of this liquid mass does not force the membrane against the wall because it is prevented from doing so by the fluid at the back Because of the great increase in the albumin content in a portion of the retina there is an osmotic action in which the retina acts as a semipermeable membrane This hypothesis explains why fluid enters in front of the retina and is discharged at the back

LESLIE I. MCCOY M.D.

Oliver K. S. and Crowe S. J. Retrobulbar Neuritis and Infection of the Accessory Nasal Sinuses
1 ch Otolaryngol 1927 vi 593

The authors state that acute neuritis of the optic nerve may result from (1) syphilis (2) tuberculosis (3) acute infectious diseases such as erysipelas

mumps influenza etc (4) multiple sclerosis and (5) infection of the accessory nasal sinuses

Changes in the papillae macula bundle result in an absolute central scotoma for form and color and a reduced level of visual acuity. If the inflammation only involves the blindness macula, the result from the secondary optic atrophy. The effect is a prompt and thorough search must be made for the source of infection.

For a case of retrobulbar neuritis due to infection of the accessory nasal sinuses (Ollrich and Croal, 1936) the operative principle is the same as with description of the paranasal sinuses.

EAR

Lym n H W The Otolaryngology and Pathology of
 Focal Infection of the Middle Ear
 9 9 3

Focal sections are frequently the cause of general leakage. A large majority of focal infiltration found in the alveolar depth at

The role of infected tonsils as foci of infection in children. Adenoviral and mycobacterial infection and infection of the paranasal sinuses is often a frequent general disease.

The authors experience in the use of the method that it is
 m la a l m to l t n n f t s m a c u s g r e
 g s t r o n e t i n a l d i s t u b a n c e O t h e r o t l o g t s h a e
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In d a f n o f n o n u p p u t e c h a i c t e t h e
 n e r l y g a u f r e q u e n t l y a l g d e h r o c
 n f e c t u s i o c e l t h e b e n e f o f d a s e f
 l a b i n t h o r n t r a l e r o u s v t e m r i f e i s s u
 i d u t t o x i c i r r a t i o n f r m n i n g e t e l f o c u s
 F o c a l f e t o m a y c a u s e t r k g p c h d i t u r b
 n e e n i a n t o l o g i c a l f a c t o r l o t i t h r i t
 c a r d c o n d i t i o a d a c u t h e m r h g e p h r
 t i T h a u t h e p t t o c a s o f h m r h a g c
 n f h r i t i v h c h t e l i t i o o f f o f f c t i o n
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In ce t un d ea f the che t k i a i g l n d u l a r
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r a d a t o n o f f o c i o f i n f c t n i t h e u p p e r e s p r a
t o r t c t

Attention is drawn to the relationship between
acodynamic influence of the tidal denials
W M I M D

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affe t c mple t by Wtt n ck l h ba el
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In the tympanum of the middle ear is the
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do s. or through a cir. um. crib. d. l. fect. the l. b.
ri. the n. c. p. u. l. e. Th. und. do. i. the mo. t.

frequent portal of invasion. Uffenorde claims that it is possible for the labyrinth to be invaded through the intact membrane of the round window by daily use of soluble bacterial toxins. In other cases the invasion takes place through an open rupture in the window membrane. For our knowledge of the histological change in tympanogenic acute labyrinthitis is indebted to Herzog. The labyrinth can be characterized by a capsular erosion. The erosion may be superficial or involve the entire thickness of the bone. The author cites Alexander's description of purulent labyrinthitis as a pathologic entity.

The history and diagnosis factors in a classification of acute diffuse labyrinthine suppuration (togethous forms) are summarized. The primary indication is that of an acute or chronic middle ear suppurative. Occasionally, the history of a discharge from the ear is not given for the reason that the middle ear involvement is not sufficiently severe to cause a rupture of the tympanic membrane. The diagnosis is complete. My patient complains of total deafness when functional hearing tests reveal the presence of a considerable remnant of hearing. For functional tests the author uses the 2-meter Politzer speaking test in combination with the B. Ray noise probe.

The following text gives characteristic findings in acute labyrinthine unpaired in the loss of hearing. It must occur suddenly to be diagnostic. The patient experiences the subjective sensation of turning in the front and horizontal planes away from the affected side. At the same time, external objects seem to be turning away from the affected side. There is a tendency to go to sleep suddenly. In the case of labyrinthine destruction, the patient falls to the side of the lesion. There is pronounced nystagmus. Horizontal nystagmus is directed away from the side of the lesion. The quick component is directed away from the side of the lesion. Certain important labyrinthine tests are necessary to confirm the diagnosis. The eardrum is hard to find in nystagmus to both sides but especially to the side of the lesion. The caloric test is the most reliable in determining whether the labyrinth is completely out of function or not. In the caloric test, the effect of the nearer ear is the eighth error; the side of the lesion is determined by the fistula test; negative

The author belie that hen a positive dig o
fiffu elp b thine destruction i made radical
m to lob rat should be pe rme la d follo e
immediately by a ope ation on th e ear f r the
e t l hment of druging He des bes his mod f
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employ fo the l n etee v rs
l le a h re to se lecte f om l rge gr up
reporte l W M P r M D

Lynn H W	Infantile M	t d ti with G t
Intestinal Symptom	1 h Oct	97

The author states that most of the elements mentioned are responsible for the planned cholera infection, the

diarrhoea vomiting and loss of weight. In such cases there should be close co-operation between the pediatricist and the otologist in deciding as to the advisability of operation. If the infant is in good condition incision of the drum head may suffice.

The author operates under local anesthesia. He attributes his fatalities to the patient's general condition.

GEORGE R. McALLIFF, M.D.

NOSE AND SINUSES

Schmiegelow E. Clinical Remarks on the Use of Surgical Diathermy for Malignant Tumors in the Anterior Air Passages. *La Jingo cope* 97 xxxv 181

The author states that in the treatment of malignant tumors of the nose diathermy gives better results than are obtained by ordinary surgical methods. Electrocoagulation prevents the spread of the disease by contact or metastasis. Good results can sometimes be obtained even when the condition is inoperable. In one of Schmiegelow's cases an extensive fast growing sarcoma of the upper jaw was successfully destroyed by surgical diathermy. The extent of the operation should not be influenced by cosmetic considerations. Postoperative facial defects can be remedied by plastic operation.

The author reviews eight cases of tumors of the upper jaw three of which were cured. He regards electrocoagulation as the most effective and least disagreeable method of destroying malignant growths of the upper jaw. In buccal carcinoma it seals the blood and lymph channels and thus lessens the danger of local recurrence and metastasis.

In the treatment of localized tumors of the tonsil surgical excision gives very good results but electrocoagulation may also be successful.

In cancer of the larynx the method of attack must be carefully chosen. For localized cancer thyrotomy with excision of the diseased vocal cord is the method of choice. More extensive growths require total resection of the larynx or destruction of the lesion by electrocoagulation. The destructive value of radium and the roentgen rays is doubtful.

In certain forms of cancer particularly cancer of the upper third of larynx and sinus pyriformis surgical diathermy is an excellent method. The author uses deep chloroform narcosis and suspension laryngoscopy in the treatment of these conditions. He reports several cases of cancer of the epiglottis in which successful results were obtained by electrocoagulation.

W. M. PATON, M.D.

Dern L. W. The Influence of Paranasal Sinus Infection in Infants and Young Children upon Certain Systemic Conditions and the Influence of Certain Systemic Conditions in Infants and Young Children upon the Method of Treating Existing Sinusitis. *Ill. Med. J.* 927 xxxv 933

In infants and young children a focus of infection in the nasal sinuses may cause a cardiac lesion, rheu-

matic fever, chorea, nephritis, pyelitis, cyclic vomiting, deforming periarthritis, anemia, anorexia, malnutrition or a chronic digestive disturbance. Remote effects more or less peculiar to paranasal sinus disease are bronchiectasis, asthma and the cholera infantum syndrome.

Particularly in cases with systemic complications there is no infallible rule for the treatment of paranasal sinus disease. The combined clinical judgment of the pediatricist and the laryngologist is necessary to determine the proper procedure. The choice of treatment depends to some extent upon the systemic condition. In certain cases of cholera infantum immediate drainage of infected sinuses may be imperative. In cases of nephrosis and diabetes on the other hand it may be necessary to avoid all traumatism of the mucous membrane.

Illustrative cases are discussed in detail. The treatment is reviewed and the end results are reported. The importance of the pediatricist in the care of such cases is repeatedly emphasized.

In young children the treatment of choice for chronic paranasal sinus infection is dietetic and climatic. In bronchiectasis treatment of co-existing chronic suppurative sinusitis has given the best results. Diet is an important factor also in this condition. Even in children it is occasionally necessary to operate on the ethmoid sinuses.

W. M. PATON, M.D.

Emerson F. P. The Varying Symptomatology of Chronic Maxillary Sinusitis Depending on the Pathology Present. *Ill. Med. J.* 947

Chronic catarrhal maxillary sinusitis results in thickening of the mucous membrane which favors virulent infection and the development of empyema. The prominent signs are a persistent unilateral or bilateral mucoid discharge.

Cases of chronic maxillary sinusitis resulting from a suppurative process may be divided into three groups: (1) those showing a thickened membrane and free pus; (2) those showing a thickened membrane and no pus; and (3) those in which the lining membrane is undergoing a degenerative process. In the first group the common signs are a purulent nasal discharge and pharyngeal irritation. In exacerbations of the chronic process there may be pain or discomfort over the affected antrum and an increase in the discharge. The discharge varies from a thin fetid secretion to a purulent or mucopurulent discharge. Since the pathological changes are confined to the superficial tissues secondary involvement of distant organs is not common. Acute exacerbation however may be followed by disastrous results. An illustrative case is reported.

In cases of the second group the relationship of the sinusitis to systemic conditions is often overlooked. Acute exacerbations of the local process may be followed by systemic complications leading to chronic myeloidism or death. There is increasing evidence that involvement of the mucoperiosteum in

these cases is a menace to the general health. When the mucoperiosteum is involved the entire lining membrane must be removed.

Seven illustrative cases are reported in detail with regard to the symptoms, the pathological change and the results of operation.

In the third group of cases there are usually no symptoms until an acute exacerbation occurs. During the acute phase the symptoms are those of a subacute nasopharyngitis. Usually there is no pain on the affected antrum. Diagnostic biopsy of the antrum may show gelatinous mass or give negative result. The whole mucosa undergoing a degenerative change. When acute exacerbations are followed by systemic symptoms, the entire lining membrane must be removed in the quiescent interval. Typical cases are reported. W. M. J. & M. D.

NECK

Renhoff, W. F. Jr. Hyperthyroidism and Its Relation to Benign Tumors of the Thyroid Gland. *J. M. J.* 9, 9.

The theory of Mobius that exophthalmic goiter due to an excess of normal function of the thyroid gland is supported by the following clinical and experimental evidence:

1. The production of the signs and symptoms of hyperthyroidism and the relief of hypothyroidism by the administration of thyroid extract.

2. The constant association of hyperthyroidism with hypertrophy and hyperplasia of the parenchyma of the thyroid gland and the fact that during a remission obtained by the administration of iodine the physiological status is restored to approximately normal within a short time of the hypothyroid parenchyma to a microscopic appearance more nearly resembling that of the normal gland.

3. The decrease of the basal metabolic rate deposition of colloid and in the lumen of the gland during an artificially induced spontaneous emission.

4. Elimination of the basal metabolic rate following the administration of thyroid extract and also in a social association with hypertrophy and hyperplasia of the thyroid parenchyma.

5. The absence of any other constant pathological lesion in the sequence other than hypertrophy and hyperplasia of the thyroid gland in cases of hyperthyroidism.

6. The cure of the hyperthyroidism by the surgical removal of 90 per cent of the thyroid parenchyma.

In ten cases of acute follicular hyperthyroidism after an atypical emission the changes in the histological structure of the thyroid are as follows: (1) an increase in the amount of colloid (2) a decrease in the connective tissue in the gland (3) a decrease in vascularity (4) an increase in the size and equality of the acini (5) a decrease in the height of the epithelium (6) a decrease in the cytoplasmic bodies of the epithelial cells and (7) a decrease in the mitotic and lymphocytic infiltration. The microscopic structure of the thyroid gland therefore and revert a

change from a state of extreme hypertrophy to one approximating the normal histological structure.

If the period of involution is prolonged the histological changes in the thyroid exceed the usual average amount of involution especially in certain areas. These areas become enlarged and form nodules which may be divided into three groups: (1) those that form colloid cysts (2) localized and encapsulated areas of dilated colloid containing acini histologically and distinguishable from the so-called colloid adenomata and (3) areas or lobules in which the involution or regression has reached the state of degeneration especially toward the center of the lobule which is characterized by a disparity in size and paucity of disintegrating acini in an abundant edematous stroma fibrous tissue and extracellular colloid.

These areas of hyperinvolution or degenerative regressive tumor have been termed involutional bodies.

It is therefore possible for no lular goiter to develop from the spontaneous or artificial involution of a smooth diffuse hypertrophy and hyperplasia of the thyroid gland during a remission in cases of hyperthyroidism.

From a study of 100 cases of nodular goiter the author has come to the conclusion that the term toxic adenoma is incorrect and should be abandoned. He believes that the clinical diagnosis should be diffuse or nodular goiter with or without hyperthyroidism and the macroscopic pathological diagnosis is diffuse or nodular goiter with or without hypertrophy or hyperplasia. J. H. W. & W. S. & M. D.

Else, J. E. Recurrence of the Thyroid Gland after the Operation of Recurrent Cysts. *J. A. M. A.* 9, 7, 1, 2, 53.

The prevention of recurrent goiter is an important problem in the treatment of thyroid disease. Recurrences may be classified as (1) pseudorecurrences (2) recurrences without symptoms and (3) recurrences with symptoms.

Pseudorecurrences are generally the result of diagnostic error, permanent lesions or insufficient operation.

Recurrences without symptoms are characterized by a definite enlargement of the remnant thyroid without the symptoms of hyperthyroidism and with a normal or subnormal basal metabolic rate. The following pathological processes have been recognized: (1) colloid goiter which is probably the most common form (2) diffuse adenomatous goiter and (3) true adenoma. Patients with a greater of the true colloid type are relieved by dissection of the thyroid. Diffuse adenomatous goiters and adenomata are not benefited by medical treatment and the majority of them probably become cancerous.

In the group of recurrence of goiter with symptoms are placed cases with a history of complete relief after the operation followed by redevelopment in the goiter and recurrence of its toxicity. In such cases all three of the common types of goiter

goiter—toxic hyperplastic goiter diffuse adenomatous goiter and true adenoma—have been found.

A study of patients with recurrences and of the tissues removed in a subsequent operation showed that the most common change is an increase in colloid. The limited portion of thyroid left was rendered sufficient by the added stimulation to produce enough thyroxin but in doing so it produced an overamount of colloid and a simple colloid goiter.

In experiments on dogs hyperplasia and hypertrophy were found after partial thyroidectomy but were more marked when the animals did not receive iodine during the period of regeneration. The hyperplasia was most marked in cells that could not be identified with any acini and were regarded as being derived from the interacinar cells described by Webster. In the earlier portion of the regeneration period mitotic figures could be seen in the cells lying between the acini but in the later portion of the regenerative period these cells occurred in such masses that they could not be positively identified as having sprung from the interacinar cells. In one animal there was a definite tubular formation in these cells such as is sometimes seen in the masses of cells found in colloid goiter of long standing.

With the exception of a forty five day dog the thyroid gland in the animals receiving iodine was approximately normal after the twenty second day except that in some instances it showed an increase in the undifferentiated cells lying between the acini. In the forty five day dog there was still hypertrophy of the intra acinar cells.

In the dogs not receiving compound solution of iodine the hyperplasia and hypertrophy were greater and there was an increase in the amount of colloid in the twenty two day twenty six day twenty eight day thirty day and thirty eight day animals. In the thirty and thirty eight day dogs the increase was so great that it presented the appearance of a colloid goiter. The thirty nine day dog had a colloid goiter at the time of operation. At the end of the period the colloid was less than normal but tubular formation fetal acini and areas of undifferentiated cells were present. The twenty and fifty one day dogs developed thyroids that had the typical appearance of toxic hyperplasia goiter of mild degree without symptoms. In the author's opinion the study of the entire series warrants the conclusion that recurrence following operation depends upon the control of regeneration and that in animals thyroid regeneration can be controlled by compound solution of iodine.

In man recurrence of goiter is not infrequent. If thyroid regeneration in animals may assume the proportion of a goiter when uncontrolled it is reasonable to believe that the same may occur in man. The author arrived at this conclusion empirically about two years ago and then began giving compound solution of iodine after as well as before the operation for the purpose of controlling regeneration. Later he gave a small amount of iodine to secure proper thyroid function. It has been only

two years since this practice was begun but the author has not seen any evidence of recurrence in that time. His routine treatment is as follows:

1. The thyroid is saturated with iodine previous to the operation by the administration of from 10 to 5 minims of compound solution of iodine three or four times daily according to the severity of the hyperthyroidism. Patients with non toxic adenomata or diffuse adenomatous goiters are given 10 minims three times daily for two or three days.

Following the operation the thyroid is kept saturated with iodine during the period of regeneration by the administration of from 15 to 5 minims of compound solution of iodine by rectum as soon as the patient is returned to bed. This dosage is repeated three or four times daily according to the severity of the hyperthyroidism preceding the operation. As soon as the patient is able to take the iodine by mouth 10 minims are given three times a day for a month. The dose is then cut down to 10 minims daily for another month.

3. A sufficient amount of iodine to meet the needs of the thyroid gland is administered continuously. For this purpose the iodized salt is prescribed if other members of the patient's family have normal thyroid glands otherwise the patient is instructed to take 10 mgm of iodine in a chocolate tablet daily.

MERLE R. HOON, M.D.

Simon F. Heart Block After Goiter Operations
(Ueber Herzblock nach Kropfoperationen) *Zen-
tralbl. f. Chir.* 1927, liv. 660.

Persons suffering from goiter always have poor cardiac function. The cause is hyperfunction or hypofunction of the thyroid and mechanical pressure upon the trachea blood vessels and nerves. Accordingly there is to be differentiated a hyperthyroid from a hypothyroid and a dyspnoeic from a congestive heart block due to goiter. The operation for goiter is incidentally also an operative treatment of the heart. If the operation is done under local anæsthesia the heart is relieved from the cause of its functional disturbance. This explains why cardiac complications are relatively rare during operations for goiter. In 128 cases operated upon during the last two years they occurred only once.

However cardiac disturbances may result from injury of the vagus nerve. The vagus does not always lie within the vascular sheath. Particularly in cases of tumor it may run in front of the vessels and therefore may be injured easily. Mechanical irritation of the vagus is much more dangerous than vagal section. It is followed by slowing of the pulse which may lead to fatal syncope. The heart may be injured also by respiratory disturbances caused by irritation of the vagus. They produce spasmodic attacks of coughing and dyspnoea gasping respiration variations in the rhythm and cessation of respiration (bronchial spasm swelling of the mucous membrane).

Eden's theory that pneumonia following operations for goiter is due to irritation of the vagus is

SURGERY OF THE NERVOUS SYSTEM

BRAIN AND ITS COVERINGS CRANIAL NERVES

Greyx and Loubat Indirect Injury of the Brain Treated by Trephination One and One Half Years Ago Retrospective Diagnostic Considerations (Traumatisme indirect de l'encephale trepanation datant d'un an et demi considerations diagnostiques retrospectives) *J d med de Bordeaux* 1917 17 69

A man twenty four years of age was kicked on the chin during a football game and three hours later developed jacksonian epileptic attacks which began with tingling in the left hand followed by loss of consciousness and generalized convulsions with biting of the tongue Four of these attacks occurred The axillary temperature was 37.4 degrees F and the pulse 90 Lumbar puncture showed no increase in pressure The spinal fluid was slightly rose colored as the result of accidental injury of blood vessels during the puncture Subdural hemorrhage from the right middle meningeal artery was suspected but trephination on the right side three days later revealed no lesion Cerebral puncture was negative On postoperative lumbar puncture the spinal fluid showed no increase in pressure no hemolysis and no tubercle or other bacteria but a slight lymphocytosis (twenty five lymphocytes) was found The sugar content was 0.86 gm per liter and the albumin content 0.6 gm per liter The Wassermann test was negative In the year and a half that have elapsed since the operation the patient has remained well

The authors doubt that the condition was traumatic They are inclined to believe that the trauma acted indirectly to awaken or accelerate the evolution of a localized brain disturbance possibly of an infectious nature This opinion is based on the slight fever the pulse rate the slight lymphocytosis the increased sugar content of the spinal fluid the free interval between the injury and the jacksonian attacks and the absence of compression

WALTER C BURKETT M D

Swift G W Choked Disk in Intracranial Lesions the Mechanical Factor in Its Causation *N Y J Med* 1917 1 579

The chief factors to which papilloedema has been ascribed are pressure upon the cavernous sinus with resultant blockage of the ophthalmic and the central retinal veins (von Graefe 1860) obstruction of the lymph flow from the eye by pressure (Schmidt Rimpler) inflammatory changes (Leher 1881) vasomotor disturbances (Jackson and Benedict) chemical changes from metabolic products (Kluckmann and others) and disturbance of the arterial venous or cerebrospinal fluid circulation

The author cites cases of choked disk resulting from aneurism and thrombosis of large basilar arteries skull fractures with cerebral damage influenzal pneumonia with resultant engorgement of the brain and stagnation in the intracranial sinuses and acute pneumonia with oedema and an increase in the intracranial pressure

The article includes a number of illustrations showing the main vessels of the optic disk and choroid the venous circulation of the brain and skull the effect of blockage at different locations and various types of choked disk due to aneurisms and tumors

In cases of tumor of the optic nerve atrophy results but papilloedema does not develop because there is no interference with the venous return Aneurism of the circle of Willis produces choked disk only when the venous sinuses are blocked Lesions in the cerebellopontine angle produce first unilateral and later bilateral choked disk Blockage of the transverse sinus results in choked disk early if the large sinuses are cut off or the aqueduct of Sylvius is obstructed with resultant hydrocephalus These lesions are associated with a higher intracranial pressure than lesions situated elsewhere

The time of appearance of choked disk depends upon the location of the lesion Direct pressure against the sinuses causes early choking whereas indirect pressure such as occurs in oedema and hydrocephalus produces a late papilloedema The cerebrospinal fluid acts as a factor only by increasing the general pressure and not by extension through the vaginal sheath of the optic nerve

The article is supplemented by a bibliography
ALBERT S CRAWFORD M D

Shuster B H Intracranial Complications of Otitic Origin with Reference to Diagnosis and Management *L Y goskope* 97 xxxvii 897

The author discusses conditions that may arise within the head as the result of infection of the ear—extra lural and subdural abscess sinus thrombosis meningitis labyrinthitis and cerebral abscess

Cases of chronic otitis media may be divided into two general groups—those with a frank discharge and those with a mild recurring otorrhea In the first group intracranial complications are rare Mastoiditis often has a tendency to become cured without operation After operation in this condition some variation in the temperature pulse and respiration is to be expected but usually subsides in from seven to ten days In restlessness and insomnia following the operation also cease as a rule but if they do not the possibility of an intracranial complication must be considered First however all other causes must be ruled out

tion of the fluid its localization depends upon a proper conception of the results of such obstruction on the ventricular system. Any intracranial neoplasm of sufficient size to produce an increase in the intracranial tension will cause variations in the position size and shape of the ventricular system. In some cases these variations are the only means of localizing such tumors and it is in such cases that ventriculography is indicated.

The technique of replacing the fluid in the ventricles by air and making the ventriculograms is described in detail. The chief difficulty in ventriculography is the interpretation of the shadows seen on the roentgen ray plates. The most important single factor in the avoidance of errors in localization is complete removal of the fluid from the ventricles. When this is done any abnormalities in the ventricular outline must be due to pathological obstruction rather than to the trapping of unspirated fluid in one of the ventricular horns.

Broadly considered intracranial tumors cause asymmetrical variations when they lie within the cerebral hemispheres lateral to the midline and impinge directly upon the ventricles and produce symmetrical variations when they obstruct the free circulation of the cerebrospinal fluid.

The differentiation of supratentorial and subtentorial lesions is considered in detail. Grant emphasizes that in the study of the findings of ventriculography the clinical findings should always be borne in mind. He summarizes in a table the results of ventriculography in a large series of cases collected from different clinics. In about 23 per cent of the cases the tumor was localized from the ventriculogram alone the neurological findings being inconclusive.

SOSMAN discusses intracranial lesions from the standpoint of the ordinary roentgenogram and describes the roentgen signs of skull lesions. With few exceptions lesions of the skull are similar to those of other bones they include injuries, anomalies, and deformities, inflammations and repair and primary and secondary new growths.

In the diagnosis of brain tumors the roentgen ray may give general or localizing evidence or better indirect and direct evidence. The general signs are merely those of increased intracranial pressure and are of comparatively little value. Occasionally displacement of a calcified pineal shadow may furnish valuable evidence as to the side of the lesion. Direct evidence of a brain tumor is the visualization of the tumor by means of a calcium deposit in the tumor mass or changes in the adjacent bone caused by the neoplasm. Only about a third of intracranial new growths give such evidence. Some of these are described minutely and shown by roentgenograms. While the roentgen ray is of considerable value and a decided help in certain cases in the majority it is either of no help or merely confirmatory. A tumor previously unsuspected previously unlocalized or of a type other than that suspected is identified in less than 10 per cent but the positive benefits derived in

that 10 per cent make it almost imperative that all patients believed to have a brain tumor be given the benefit of a thorough roentgen ray examination.

ADOLPH HARTUNG, M.D.

Peet, M. M. Pituitary Adenomatoma. A Report of Three Cases. *Arch. Surg.* 1927, xv, 829.

Pituitary adenomatoma are solid or cystic benign or local malignant tumors containing enamel or enamel forming tissue and developing from epithelial rests of the embryonic hypophyseal duct. Several types of tumors or tumor cysts in the sella and suprasellar regions have been described but there is considerable confusion as to their classification and etiology. The most common tumor of the hypophysis is now regarded as an adenoma. The cysts are believed to develop from embryological remnants of the hypophyseal duct proper or from its extreme upper portion the pouch of Rathke. Cysts or tumors arising from the duct are lined with squamous epithelium and those arising from the pouch of Rathke with cylindrical frequently ciliated epithelium.

Cysts arising from Rathke's pouch are primarily intrasellar in origin whereas tumors of the hypophyseal duct because of the rotation of the pituitary during its development may occur at any point from the tuber cinereum at the base of the third ventricle downward along the infundibulum to the anterior hypophyseal lobe. Erdheim has shown that epithelial cell rests remnants of the hypophyseal duct can be demonstrated in 80 per cent of normal adults.

As compared with pituitary adenomata the squamous epithelial tumors originating in the hypophyseal duct are relatively rare. They may be classified histologically as (1) benign papillary cysts or intracystic papillomata (2) benign or locally malignant adenomatoma and (3) spindle cell carcinoma.

Adenomatoma constitute about 50 per cent of tumors arising in the hypophyseal duct. They occur with equal frequency in both sexes and are most common in the second decade of life.

The clinical picture varies with the location of the tumor but in nearly all cases there are symptoms of hypopituitarism and obesity. Many cases present the classical Froelich syndrome. Occasionally there is infantilism without adiposity. In older patients who have developed normally the growth of the tumor tends to reverse the secondary sexual characteristics. Drowsiness is a common symptom and is apparently not related to the degree of adiposity. In the author's cases the basal metabolic rate was definitely subnormal. In none of the cases reported has glycosuria or polyuria occurred.

Changes in the ocular fundi and defects in the visual fields depend upon the location of the primary growth. In suprasellar subchiasmatic lesions primary optic atrophy is the rule.

If the tumor develops upward and backward it obstructs the foramina of Munro and causes hydro-

stitch abscess o pus n the ound may explain the picture r the symptoms may be due to an ailment such a tonsillitis diphtheria appendicitis involvement of the other ear pneumonia with or without megaluritis o nephritis On account of the as a mit g and lizzi s patient ith chole purulent tit melia are oft n treated f r gastr c d t u lances

The are afe vmpns hich al e o n com bition hould direct att nt nt the head The most important i he fche Ths may be se ere or persi tent o both A othe i om tng with or thout hea la l c and with ut as ocated gastric ailment A thrl ve t g Iev r chills and a dstulance of th relat i t e n the jule temperature Ir jrtion re uggest e Local izing ne l g al sig ll c nfm a postive d agno s of trac n al c mplications W th th except on of these all f ile ig s menti ned may be pre t n othe lm t uch as cute i lge tion and i luen

In acute co lto of the ar there a nflammato ect n ith t ue e ormal n th r resi tance Th mu u memb ane has a goo l blood supply I a chron c c diti n upon hch a cute v xclat n up rmp ed the muc ment ne l tali la l th re i tanc f th un l e ng b n e l uce l e c u e the bl l apply cut f f t n l t i u l e the uthor de scribe th mecha m of rt cra l i asio

Eptic tempe at c m t i l b v ext g i ugge t e f n o Wh at i g d o e t c u the p e f i u th omb s i do ibtful Snu thr ml i ugge t d l o hen th f n k l but h l i che o t a p o nment v mpt m D l n g haemogl bin values ha th ame g n h a c s h a g l b n i let velby the trept c c s h æ n l i t u the comm inv d g o g a m u n l e m t In v ung child en an l nfa t t l re may b a p m a y jug lar t l b thrombos s Th s pr lably lue t som f his e the fl of th m l dle ear h ch llo the bulb to be d r tly vaded ithout the l elop n t f m a t o i d t i In a ca of thrombo s of the ave u s i u th o t l o k o n unfav rable that a rad cal p cel c ms j u t i f d

Ve t go a d mti g hould direct atte tion to the l b v i th a d ce ebll m Inv lvement of the laby nth suggestel by c rent vom tng th e t go v tagmus of th rota y type and nau ea sho ng s gns of abatement Inc easi gly seve curre t om tng w th vert go a d nystagm s of rotary t pel ut thout n u e a ugge t a cere bllar b ces Diffuse uppu at e laby r n t l t i s al ways accomp el by ve t go but ths may n t be noted f the p t e t i s bed Therefo e the p t ient must be ca efully quest ned and h s position n bed must be b e r v l He w l l e on the s d e of the qu ck mponent—the ound de—so that he may tu n h eyes up ard hen ddressed o v hen h d s e to look ar und the room in the d ectio of the low compon nt

Bra n absces and meningitis are character ed by headache and a change in the mentality In meningitis the mental processes are qu ck h l i n brain abscess they are slow The fear of lumbar puncture in cases of suspected sinus th ombos or brain abscess is probably founded upon experi nce but in the autho s op nion the su geon is not justife l in remaining in ignorance because of poo result in isolated cases I obe y has do e hundre d of punctures—many in cases of si us thrombos s—ithout causing ill effects

In d scuss ng the symptoms of b ain abscess th author emphasizes the occasional fall n the pul e rate to subnormal in the presence of a normal t m perature and revews the neurological local z g igs sensory aphasia and tests to detect invol e ment of the cranial nerve The Ayer Tobey test of pinal fl u d response to unilateral jugular com pre sion has not been altogether satisfactory i has hands He bel eves the flush ng of the face and ngorgement of the etinal vessels upon comp ess on of the ormal jugular—te s described by Ge wner—depend largely upon the personal element He cha acter zes ventr culog a y hy as a form dable pro ced u e fo diag o s is when an ab cess is merel suspected In certain cerebellar conditions he has found Bárány tests helpful The impo ta ce of as accu ate h tory emphasi ed

A cle otic masto d is dangerous It is generally looke l upon as a healed i lammation but in e ry chron c c se ith intracranial complications which is reviewed by the author the mastoid was hard and s lerosed on the su face and the depths of the bo e ho ed necrosis and infect on When there s mastoid pain follow ng chronic otorrhea and sclerosi s sho n n the roentgenog am prompt a d adical su gery i i cated Packs for the control of si us bleeding are generally left in place f rse cal day after per t on fo si u thr mbos b t i the author op nion should be remov d as early as possibl to prevent backward infect on I o e of Shuster s case the packs v r removed after twent four hours ith no subsequent bleed g

F r me ngitis conservative treatment is recom mended

In conclusion Shu ter states that King s rad cal t extme t for b ain abscess deserves a further tral because of the excellent results King has obtai ed with it

Gr RT C V ERSO MD

G ant F C The Indications f nd the Tech niqu of Ventr ulography R d l gy 97

388
Sos nan M C Radi logy as an Aid in the D g no of Skull and Intr c n al Le l R d l gy 97 396

GRANT mphasi s that a proper app ec ati n o the n l e c t n for and technique of vent culog a phy a d an ntelligent interpretation of vent culograms req e a thorough knowle lge of the norma anatomy and physiology of the cerebrosp n al flu channel When a tumor bstru cts the free circula

tion of the fluid its localization depends upon a proper conception of the results of such obstruction on the ventricular system. Any intracranial neoplasm of sufficient size to produce an increase in the intracranial tension will cause variations in the position size and shape of the ventricular system. In some cases these variations are the only means of localizing such tumors and it is in such cases that ventriculography is indicated.

The technique of replacing the fluid in the ventricles by air and making the ventriculograms is described in detail. The chief difficulty in ventriculography is the interpretation of the shadows seen on the roentgen ray plates. The most important single factor in the avoidance of errors in localization is complete removal of the fluid from the ventricle. When this is done any abnormalities in the ventricular outline must be due to pathological obstruction rather than to the trapping of unexpired fluid in one of the ventricular horns.

Broadly considered intracranial tumors cause asymmetrical variations when they lie within the cerebral hemispheres lateral to the midline and impinge directly upon the ventricles and produce symmetrical variations when they obstruct the free circulation of the cerebrospinal fluid.

The differentiation of supratentorial and subtentorial lesions is considered in detail. Grant emphasizes that in the study of the findings of ventriculography the clinical findings should always be borne in mind. He summarizes in a table the results of ventriculography in a large series of cases collected from different clinics. In about 23 per cent of the cases the tumor was localized from the ventriculogram alone the neurological findings being inconclusive.

SOSMAN discusses intracranial lesions from the standpoint of the ordinary roentgenogram and describes the roentgen signs of skull lesions. With few exceptions lesions of the skull are similar to those of other bones they include injuries anomalies and deformities inflammations and repair and primary and secondary new growths.

In the diagnosis of brain tumors the roentgen ray may give general or localizing evidence or better indirect and direct evidence. The general signs are merely those of increased intracranial pressure and are of comparatively little value. Occasionally displacement of a calcified pineal shadow may furnish valuable evidence as to the side of the lesion. Direct evidence of a brain tumor is the visualization of the tumor by means of a calcium deposit in the tumor mass or changes in the adjacent bone caused by the neoplasm. Only about a third of intracranial new growths give such evidence. Some of these are described minutely and shown by roentgenograms. While the roentgen ray is of considerable value and a decided help in certain cases in the majority it is either of no help or merely confirmatory. A tumor previously unsuspected previously unlocalized or of a type other than that suspected is identified in less than 10 per cent but the positive benefits derived in

that 10 per cent make it almost imperative that all patients believed to have a brain tumor be given the benefit of a thorough roentgen ray examination.

ADOLPH HARTUNG, M.D.

Pituitary Adamantinomata. A Report of Three Cases. *Arch Surg* 1927 xv 829

Pituitary adamantinomata are solid or cystic benign or local malignant tumors containing enamel or enamel forming tissue and developing from epithelial rests of the embryonic hypophyseal duct. Several types of tumors or tumor cysts in the sella and suprasellar regions have been described but there is considerable confusion as to their classification and etiology. The most common tumor of the hypophysis is now regarded as an adenoma. The cysts are believed to develop from embryological remnants of the hypophyseal duct proper or from its extreme upper portion the pouch of Rathke. Cysts or tumors arising from the duct are lined with squamous epithelium and those arising from the pouch of Rathke with cylindrical frequently ciliated epithelium.

Cysts arising from Rathke's pouch are primarily intrasellar in origin whereas tumors of the hypophyseal duct because of the rotation of the pituitary during its development may occur at any point from the tuber cinereum at the base of the third ventricle downward along the infundibulum to the anterior hypophyseal lobe. Erdheim has shown that epithelial cell rests remnants of the hypophyseal duct can be demonstrated in 80 per cent of normal adults.

As compared with pituitary adenomata the squamous epithelial tumors originating in the hypophyseal duct are relatively rare. They may be classified histologically as (1) benign papillary cysts or intracystic papillomata (2) benign or locally malignant adamantinomata and (3) spindle cell carcinoma.

Adamantinomata constitute about 50 per cent of tumors arising in the hypophyseal duct. They occur with equal frequency in both sexes and are most common in the second decade of life.

The clinical picture varies with the location of the tumor but in nearly all cases there are symptoms of hypopituitarism and obesity. Many cases present the classical Froelich syndrome. Occasionally there is infantilism without adiposity. In older patients who have developed normally the growth of the tumor tends to reverse the secondary sexual characteristics. Drowsiness is a common symptom and is apparently not related to the degree of adiposity. In the author's cases the basal metabolic rate was definitely subnormal. In none of the cases reported has glycosuria or polyuria occurred.

Changes in the ocular fundi and defects in the visual fields depend upon the location of the primary growth. In suprasellar subchiasmatic lesions primary optic atrophy is the rule.

If the tumor develops upward and backward it obstructs the foramina of Munro and causes hydro-

cephalus and choked disk with simple contraction of the visual field. The roentgenogram may show calcification above the sella. If the tumor grows downward, papilloedema defect will appear in the lower quadrant of the visual field and temporal hemianopia will result.

Lesions up to the third ventricle and involving the chiasm and optic nerves usually produces a combined picture of increased intracranial pressure and primary optic atrophy with defect in the visual field.

The X-ray picture depends upon the site of the adamantoma. When the tumor develops in the anterior hypophyseal lobe, relatively enlargement of the sella turcica to be expected. The mass appears flattened as a simple increase in size of the inferior floor of the sella of the anterior or posterior process. When the tumor extends upward into the infundibulum the sella may appear normal even when growth has reached a considerable proportion or the picture may be characteristic of a primary intrasellar growth. The most characteristic antigenic observation is a suprasellar shadow. Calcification in the region is practically always in the form of a cystic adamantinoma.

The final diagnosis is suggested by a definite history depends on microscopic examination. The latter reveals an adenoid cystic epithelioma usually with columnar cells in palisade formation at the periphery of the epithelial masses.

The adpity associated with pituitary and hypophyseal duct tumors is probably due to the deficiency of hypophyseal function resulting in cholesterol deposits within the tertiary infiltration.

The mortalities of all treatments has been high. Operation affords the only hope of improvement.

The author reports three cases. The first was that of a boy, 12 years old, who was of the thin type and had mainly optic atrophy with hemianopsia of the inferior perception and enlargement of the sella. The destruction of the adenomatoma of the pituitary incompletely removed. The operation was followed by some improvement in vision.

The second case was that of a girl of ten years, who was of the dysplastic type and showed bilateral papilloedema, optic atrophy and almost complete loss of inferior perception. The basal meninges were subnormal. The avascular lightening of the sella and an irregular calcification of the area above it. At operation a suprasellar calcified tumor was found which extended upward into the third ventricle and pushed downward into the chiasm. The tumor was removed almost completely. The pathological report is adamantinoma. The patient died soon after the operation.

The third case was that of a girl of 15 years, who was of normal type and showed mainly primary optic atrophy without papilloedema. The X-ray revealed enlargement of the sella and destruction of the posterior clinoid and a suprasellar shadow due to

calcification. Operation disclosed a cystic tumor. After a pituitary tumor was completely removed. The pathological report was adamantinoma of the craniopharyngeal duct and a cyst of Rathke's pouch with cholesteatoma. The patient made an excellent recovery with considerable return of vision.

L. F. S. CRAWFORD

Penfield, W. Chonic Meningeal (Post Traumatic) Headache and Its Specific Treatment by Lumbar Air-Insufflation in Encephalography.
S. G. G. *Obst.* 1971: 747.

The author reports the cases of seven patients who suffered from headache and dizziness following head injury received from four weeks to eight years previously. Cessation of these symptoms was first obtained in a case in which lumbar insufflation as done for diagnostic purposes. The second case presented such a lesser problem that the measure was undertaken frankly as an experiment. In the other cases it was done because the seemed to be of aid on the assumption that it could give relief. In the one case in which the vertigo recurred only a small amount of air was used. This patient will probably be given no further injection.

In two of the cases consciousness was not lost at the time of the injury but in the others the period of unconsciousness ranged from two minutes to three hours. In only three cases could a factor be proved. The technique of the air insufflation and the after care are described.

One of the interesting features shows that others have observed the cessation of headache after injection for encephalography but in each case the improvement was incidental to diagnostic study. In even cases reported the headache subsided without the cause of the syndrome and the treatment given at first seemed to be of little avail as four of the seven patients spent from two to four weeks in bed following the injury. Some of them showed evidence of atrophy of conclusion others air had identical pain from the subarachnoid into the subdural space and in two or three definite subarachnoid cysts were seen.

The syndrome is caused by a mechanical mechanism which has to do with abnormality of the cerebral meninges. The abnormality may be associated with an alteration in the pulsation of the cerebrospinal fluid caused by cysts, thin meningeal adhesions or a compression by some mechanical disturbance. If a cystic adhesion tenses a pressure in the air bubble may separate the filaments of the meninges formed in this condition.

G. E. CLARK

SPINAL CORD AND ITS COVERINGS

Herrmann, L. G. A Bifurcated the Spinal Canal. S. G. G. 1971: 83.

Four bodies free in the spinal canal are rare. The author reviews seven cases from the literature and reports one case of his own. The latter was the case of a laborer who entered the hospital in August

1926 complaining of sharp shooting pains and attacks of numbness in the leg cramp like pains in the abdomen difficulty in walking urinary frequency and impotence Three years previously he had been shot by a 3 caliber pistol the bullet entering the left hypochondrium near the mid clavicular line Operation was performed at that time but the bullet was not found As it was not thought to be in the spinal canal the latter was not explored The patient remained well until December 19 5 when the symptoms mentioned gradually appeared The possibility of tabes was considered

Examination revealed absence of the patellar Achilles and plantar reflexes and sluggishness of the abdominal and cremasteric reflexes Over the posterior portion of the thighs there was slight hyperesthesia but this was not constant Two tests showed the spinal fluid to be negative X-ray examination at different times revealed the presence of the bullet first in the region of the first sacral vertebra then in that of the fourth lumbar vertebra and again in that of the first sacral vertebra At exploration in the region of the first sacral vertebra the bullet was not found and subsequent X-ray examination showed it to be in the region of the third lumbar vertebra where it had migrated probably because of the patient's position on the table At a second operation during which the patient's head and shoulders were elevated the bullet was easily removed

The patient made a good recovery and one year after the operation was free from symptoms Except for sluggishness of the patellar and Achilles reflexes the neurological examination was negative

Before the dura is opened in such cases it is well to allow sufficient time to elapse for the subsidence of the infection Roentgenograms should be taken in various positions and fluoroscopic and stereoscopic studies should be made In the majority of the cases reported more than one operation had been performed because of failure to find the bullet in the expected position (HUBERT C ANDERSON M D)

SYMPATHETIC NERVES

Clark S L The Superior Cervical Sympathetic Ganglion in Angina Pectoris A Microscopic Study *J L b & Cl M J* 927 111 101

Clark states that the location of the pathological changes of the chronic form of angina pectoris the

exact source of the pain and the best method of treating the condition are problems still to be solved He reviews the anatomy and physiology of the sympathetic system from the standpoint of angina pectoris and the theories of various investigators regarding the condition Little study has been made of the ganglia removed at operation Clark reports on seven ganglia removed from such cases giving the case histories and the findings as to the size and shape of the nerve cells the amount of pigment the state of the Nissl bodies the relative number of capsule cells the amount of connective tissue the condition of the blood vessels and the presence of leucocytes Six of the ganglia were superior ganglia and one was a middle cervical ganglion

Some of the ganglia chiefly those of older subjects showed considerable brownish pigment in the cells This pigment is known to increase with age but it was found also in the ganglion of a ten year old boy who had died of rheumatic fever a ganglion used as a control In some instances lymphocytic infiltration was found in small areas of connective tissue There was no increase in the connective tissue nor any apparent change in the number or size of cells or fibers as compared with the controls The vessel did not show any evidence of arteriosclerotic change

In each of the osmic acid preparations there were small clumps of large myelinated fibers resembling sensory fibers from the cardiac plexus through the lower sympathetic connections as traced by Edge worth Ranson and Shrive These were larger than the myelinated fibers of the sympathetic nerve trunk Concerning their origin and course the author only speculates but he presents reason for the belief that they may be sensory fibers from some cerebrospinal nerve A sensory pathway from the heart through the vagus to the superior cervical sympathetic ganglion and then to the cord by way of the rami communicantes of the upper cervical nerves has been suggested

This histological study revealed no change in the superior cervical sympathetic ganglion which are specific for angina pectoris but Clark admits that the pathological changes of the condition might be located here though they are not recognizable under the microscope The relief of the pain following the removal of the ganglion has not as yet been satisfactorily explained

(HUBERT C ANDERSON M D)

SURGERY OF THE CHEST

CHEST WALL AND BREAST

McFarland J Adenofibroma and Fibroadenoma of the Female Breast. *Am J Surg* 1901 9

A critical analysis of 89 benign fibroadenomas of the female breast as made from the clinical and histopathological studies for the purpose of simplifying the nomenclature. These tumors had been classified by numerous pathologists of five first class hospitals under thirteen different names including adenoma, fibroma, myxoma, sarcoma, cystadenoma, and with various combinations.

Careful microscopic examination revealed 57 true tumors, 17 non-tumors, and 37 indeterminate. The author suggests that the calling of non-tumors by the names of tumors may have been merely an attempt on the part of the pathologists to cope with the surgeon.

The true tumor is either apparently aetiologically single, genuine, the periductal fibroma of Waerslev, in which the fibroblastic structure seems to be derived from periductal tissue. They usually developed during the first half of adult life, the average age of the patient being twenty-eight years.

The non-tumors occur elsewhere, the half of sexual life, the average age of the patients being thirty-seven years. They are simply mammary tissue either in some stage of involution. The author calls attention to the fact that there are anatomical and physiological disturbances of the breast peculiarly related to the pubertal pregnancy, lactation, and the menstrual period, which may occasion lump formation in relation to tumors.

In conclusion, McFarland states that a system of nomenclature which permits uniformity in no tumor to be given the same name, is of little value and should be abandoned.

McFarland M. R. M.D.

Hendley W. S. P. A terminal Invasiveness of the Throat in Breast Cancer and Its Suppression by the Use of Radium Tube as an Operative Procedure. *Surg Gynecol* 1901 10

The author believes that in many cases of carcinoma of the breast, especially in those of the lymphatic glands lying along the internal mammary artery, takes place prior to operation. Therefore, in nearly every pre-operative operation on the breast, he places a radium tube above the first rib, close to the position of the terminal portion of the main lymphatic duct and buries another radium tube in the intercostal muscles at each of the inner end of the first three intercostal

space. He cites cases to demonstrate the importance of the site in the neck. Since he has been using this pre-operative procedure, he has how improved as regards the influence of recurrence.

Nathan V. C. O. M.D.

Medical Society of London. Late Result of Operation for Carcinoma of the Breast. *Br J* 1901 8

The present is based on 65 cases of carcinoma of the breast which were operated upon, of less than 10 years ago. All except 3 of the patients were females. The prognosis is about the same in both males and females, but is slightly better in females than in males. In males, the young persons it is not so generally believed.

Of 3 patients upon whom the radical operation as performed by the late and well-known to operate. Of patients with involvement of the axillary glands at the time of the operation, 1 was alive and well 3 years later. The other was subjected to the removal of a portion of the scapular cartilage and the pectoral muscle 7 years after the primary operation and died 1 year after the first operation from local recurrence. In cases of invasion of the scapular cartilage and muscle, 1 year after the primary operation, but the patient was alive and well 5 years after the primary operation. In all of these cases, just at the time of diagnosis was macroscopic.

In the cases of the diagnosis as made both macroscopically and microscopically. Of 45 cases of carcinoma of the breast, the radical operation was performed in 4. The type of the patients treated by the radical operation, 1 was from recurrence from 10 to 1 year later. In 6 cases of the carcinoma of the scapular cartilage type. Of 21 patients with this type of carcinoma, 1 was subjected to the operation 9 years free from recurrence from 10 to 1 year later. Of 4 patients, then, 1 was cured, 1 was operated upon and died, 1 was free from recurrence from 0 to 5 years later. Of 1 patient, 1 was operated upon radically for cephalic carcinoma, 1 was free from recurrence from 10 to 1 year later. Of 1 patient, 1 was operated upon locally for duct carcinoma, 1 was free from recurrence from 0 to 6 years later.

In the present analysis, the site of the operation, radical or local, of the tumor, carcinoma of the breast, to the removal of the breast, the fascia, the pectoral major and minor, and the axillary glands. Of the 135 patients treated radically, 1 was free from recurrence from 0 to 1 year later.

In nearly 50 percent of the total number of cases, one or more operations were necessary in addition to the primary operation.

Of the total number of 265 patients 73.6 per cent were alive and well with no signs of recurrence from 10 to 34 years after the primary operation. Of the patients who were alive more than 10 years after the primary operation a recurrence developed in about 17 per cent. C. O. HENDAL, M.D.

TRACHEA LUNGS AND PLEURA

Moersch H. J. and Boothby W. M. The Value of Oxygen Following Bronchoscopy in Children. *Arch Otolaryngol* 1927 1: 54.

Moersch and Boothby explain on pathological grounds the rationale of the administration of oxygen in the treatment of laryngeal edema and its sequelae. A vicious circle is established by the sequence of narrowing of the laryngeal hiatus, increased respiratory effort, increased variation between negative and positive pressures in the terminal bronchi, edema of the alveolar walls, and obstruction to the diffusion of oxygen with aggravation of the dyspnea. If a foreign body and bacteria have been inhaled bronchopneumonia results.

The authors undertook treatment with the oxygen chamber to break the vicious circle by decreasing the cyanosis and diminishing the edema. Their object was to decrease the danger of bronchopneumonia.

They report three cases. In the first case bronchopneumonia was established before the administration of oxygen. The edema subsided rapidly and within four days the pneumonic inflammation was nearly resolved.

In the second case tracheotomy had been done but the presence of tenacious mucus and pulmonary edema would have caused death if the oxygen chamber had not been used. Within twelve hours the patient was breathing easily and the temperature was normal.

In the third case a peanut had been aspirated into the left bronchus. Only by recourse to the oxygen chamber could the serious symptoms be controlled. These recurred within two hours after the patient's exposure to ordinary air and abated on his return to the oxygen chamber. During such an interval the foreign body was removed and a considerable quantity of pus was aspirated from the bronchi. The temperature which had been as high as 105 degrees F. returned to normal on the following day. The authors believe that the child's life was saved by the use of oxygen.

Morrison I. F. Pulmonary Abscess—Postoperative. *Clinic & Ill. M. J.* 927 11: 79.

The author reviews 241 cases of pulmonary abscess in 40 of which the condition followed an operative procedure.

At the San Francisco County Hospital and the University of California Hospital in the period from 1913 to 1917 pulmonary abscess followed tonsillectomy once in 4800 cases. After this operation the symptoms begin on the second, third, or fourth day

and the abscess ruptures between the fifth and fourteenth days. After other operations the symptoms begin with a septic temperature and often with pain in the chest on the third and fourth day. The abscess is formed much more frequently in the right lung than the left lung.

For the first three months the treatment may be medical, expectant and supportive. Bronchoscopy may be found of value. The condition may clear up under medical treatment or run a chronic course. The prognosis as regards complete cure is unfavorable.

Postoperative lung abscess may result from the aspiration of infected material or infection of the lung by way of the blood or lymph stream. The author believes it is more apt to be produced by way of the blood stream after general surgical procedures and by aspiration during tonsillectomy. In 7.5 per cent of 200 cases of tonsillectomy, Morrison found blood in the trachea and bronchi on bronchoscopic examination after the operation.

Morrison concludes that the danger of the development of a pulmonary abscess is no greater after tonsillectomy than after other operations. The only abscesses that are preventable are those due to aspiration. Infection of the lung by way of the blood stream is not common. The lymph stream as a route of infection is of minor importance.

C. O. HENDAL, M.D.

Hirsch I. S. The Roentgen Diagnosis of Malignant Neoplasms of the Lung. *Radiology* 927 11: 470.

With the advent of accurate methods of diagnosis, especially roentgen examination, the determination of malignant neoplasms of the lung has been facilitated and the comparative frequency of such lesions has been demonstrated. Since the roentgen appearance is a representation of the gross pathology, a knowledge of the latter is essential for the correct interpretation of roentgenograms. The author describes the gross pathology in detail as regards the type of tumor, the mechanical consequences of the growth of the tumor, the reactive processes in the surrounding lung and pleura, and secondary circulatory and degenerative processes in the tumor tissue. Though a case of lung tumor when first seen may present only one of the pathological changes cited, the average case, and particularly the case of long standing, presents to a greater or less degree nearly every variety of direct or indirect change of tumor formation.

The relative diagnostic value of the clinical bronchoscopic and roentgenological examinations is discussed at some length. Different types of malignant tumors of the lung may resemble each other so closely that it is impossible to differentiate between them. Secondary tumors usually produce multiple, definitely circumscribed rounded shadows. Benign tumor cannot always be distinguished from malignant tumors by means of the roentgen appearance alone.

SURGERY OF THE ABDOMEN

ABDOMINAL WALL AND PERITONEUM

Paterson D An Investigation into the Incidence of Hernia in Children *J Ch Dis Child* 927 11 3 8

Iaterson states that of the total number of patients entering the dispensary of the Hospital for Sick Children London in a period of 5 years 0.8 per cent had some form of hernia. Seventy nine per cent of those with hernia were males. Of 773 patients with simple inguinal hernia 90 per cent were males. Of the 564 cases which were operated upon a recurrence developed in 4 (0.7 per cent). Of the 209 cases which were not operated upon the hernia disappeared in 18. Therefore of the 773 cases 24 per cent did not require operation. A spontaneous cure occurred in 3 per cent of the females but only in 22 per cent of the males. The spontaneous cures occurred usually before the first year of age but in some cases there were recurrences at interval up to the age of three years. In some cases the neck of the sac underwent fibrosis but remained a potential sac. Such a potential sac may later give rise to sudden hernia following exertion.

Of the simple inguinal hernia 62 per cent were on the right side 0 per cent were on the left side and 18 per cent were bilateral. In females the hernia was found on the right side in 45 per cent and on the left side in 35 per cent.

Eight herniae were designated as strangulated but did not necessitate resection of the bowel. They were all in infants under two years of age.

Of the 214 patients with an umbilical hernia 53 per cent were males. One hundred and one of these herniae disappeared spontaneously the incidence of such disappearance being about the same in males and females. Both inguinal and umbilical herniae were present in 30 males and 1 female.

The treatment was (1) circumcision if there was any straining (2) the application of a rubber truss and (3) operation after one year. Forty six of the umbilical herniae were repaired and 67 were not operated upon. A large number of the latter became much smaller. Since about half of the umbilical herniae closed spontaneously operation is usually unnecessary for this condition before the twelfth year of age.

JAMES B. BROWN, M.D.

Buchbinder J. R. The Prevention of Peritoneal Adhesions and Encapsulation. The Preliminary Report of an Experimental Study of the Peritoneal Reaction to Hypertonic Dextrose Solution. *Surg Gynec & Obst* 132 4 63

According to the voluminous literature on peritonitis no fluid or solid foreign body however bland or non irritating or sterile can be placed in contact

with the peritoneum without producing prompt encapsulation by adjacent loop of bowel or omentum and no method has been developed whereby adhesions between contiguous inflamed loops of bowel and omentum can be prevented.

The experimental work of Yates which was carried out in 1903 and is largely responsible for the present day attitude regarding peritoneal drainage showed that relative encapsulation due to the precipitation of fibrin is immediate and absolute encapsulation occurs in less than six hours. Such bland substances as vaseline paraffin oil olive oil peptonized milk and egg albumen not only fail to prevent adhesions but excite their formation by the production of a chemical peritonitis.

When a hypertonic solution is brought into contact with the peritoneum it produces a transudate. Experiments performed by Buchbinder with a 20 per cent solution of dextrose showed that when such a transudate is produced in sufficient amounts it limits or entirely prevents the formation of fibrin. Under such conditions Buchbinder is able to keep rubber drains of various types unencapsulated and communicating with the free peritoneum for two and three consecutive days. He attributes the prevention of fibrin formation and subsequent encapsulation to the great dilution of the peritoneal exudate.

In another series of experiments performed by Buchbinder tincture of iodine was used to produce a chemical peritonitis. The iodine was applied to the peritoneal surface of 10 or 12 in of the small bowel. It uniformly produced massive inflammatory adhesions between almost all of the loops of small bowel and a violent but sterile peritonitis. The inflammatory reaction spread to the omentum which completely enveloped the infiltrated bowel to form a tumor that was readily palpable through the abdominal wall. When a transudate was maintained for twenty four hours by means of repeated injections of dextrose solution adhesions between the contiguous inflamed loops failed to occur.

The author calls attention to the fact that the method is associated with the danger of serious dehydration which in some cases may prove fatal. This danger is remote however if the maximum safe dose of the 20 per cent solution—one fifth of the body weight—is not exceeded. Normal saline solution should be administered intravenously.

The peritoneum is only slightly damaged. Histologically a mild exudative peritonitis is produced. Glycosuria is of uniform occurrence but variation of sugar tolerance is not a source of danger and can be controlled by the administration of insulin. In the cases of some of the dogs experimented upon no harm resulted when the abdomen was filled with fluid and there was a constant glycosuria for a week.

In conclus on the author state that if this experimental work is carri d out farther ith bacteri al peritonitis t may mpro e the treatment of severe diffuse o spreading pe toniti by facilitat g drain age for the removal of a vast am unt of toxic exudat

Johnson H L. Observ t ons on the Prevent n of Postoperati e Pe tonit nd Abdom nal Adhesio s S g G. Ob t g l 6

The author cites Deave s cl sification of adhesions Deaver groups adhes ons into the congenital and acquired types d subd des those of the acqui d type into the infl mmat ry and the operati e He states that inflammato y adhesions may be c nst active as ell as d tructive Construct e adhes ns r present the deposit of fibrin in the pr mary tion ag n t pe ton al inflammation Dest ut e adhe ons arc d ns unabs rbable bands of organized fibrin It partic larly th e construct adhesions that Joh o deals in this t c le

Among the causes of abdominal adhesions mentioned by Deaver are collections f bl d the peritoneal cavity, ceral pos e and the trauma of sutu lig tures in trume ts and poor operative tchn que The ea ly reaction to an infl mm to y process, characterized by a o eff on c taining ph goocytes In add t o th s ser us effu s the isc l ave of the peritoneum becomes covered by a fi e layer f fibrin which is con t ct e and protect e and in the absence of a s e e peri t n t s r xtensi e t eum s usually abs rbed

The author ctes McCallum s explanati n of the autolys s or digestion f the adhesions by a p o te lytic ferment present in the effusion Oppo ing this ferment the is fo m d the nti n vm lmut g the act on of the leuc protease These ferme t re n rmally present ithin the leucocytes and a d i th acti n of the latter Upon disintegrati n of the leucocytes they become liberated t act on ur round gti es Th efore f the prote lytic enzyme prepond at liquefaction and abscess f mation result but f the antie yme is n e ces th liquefaction i checked

Many substances have been u ed to aid thi eac t on Recently a J panes sur eo Kubota succeeded c s g th resolution f tifically po du ed adhe s by the e of a r o oo soluti on of papain a ferment fom the unripe fruit of the p pay tee which is acti n neutral and alkaline med a

Johnson as led to n est gate the biological prevention of abdominal adhes ns by repo ts from G mary In a case ear ecti on fo place to pr e o a patient ho as in need of blood t ansfus he left all of the blood an l am otic fluid r leased by th op ation thir the abdomen r the pel The p t ent mad a perfect rec y H has subsequently follo ed the same proced re i fifty three abd m nal casarean sectio s In e ghteen of these ca e he inspected the abdomen at later operations

Even hen definite infection was present the post operati e course as normal and without the formation of adhesions

In experimental ork do e to dete mine the effect of amn otic fluid in the abdomen of the guinea p follo ing e ere trauma to the intestine and peri to eum ery satisfacto y result as egards to the prevent on of adhesions were btain d

Johnson d a s the following concl sions

Amn tic fl id is a log cal s bstance to employ f r the prevent on of adhes ns once one f its ch f functi n in its natural location the prevent on of adhesions bet een th mniotic sac and the f tu

This fluid ste l ed by the Berkefeld filter meth d is safe to use in the abdomen al c v ty after operati n

3 It act on i the p t neal cavity is the immediate p ducti on of protecti e lave of fibrin on the per t neal su faces and a mode ate l cal leucocyt sis followed by complete resoluti n of the fibrinous d posit leaving o permanent injury to the se o surface

4 It prevents p r t itis by its quick action i s tt gup fib ous all of defe se and stim lati g m de ate l cal leucocyt o It prevents adhes appa ntly by stim lat g the rap d resoluti f the pl tic exudat through th act n of proteolytic f me ts h ch tur a e d e to the local leucocyt is

Laboratory and cl ncal bser ati ns have pro ed bey n l any e s able doubt that the pes f th fluid n the abd m al cavity after op t n has a dist t beneficial act n g st the de elopment of p t itis a d the f rm ti of adhes o d ith ut a delete eff ct

H RM N O McP E T M D

GASTRO INTESTINAL TRACT

Mutie F and Po l P M d l C e of C te u UI of the St m hunde Radi l g Al C nt ol (G é m d l so t ol d l g q d l e d l t m) P Ad l 9 7 x 9

Th term craterou (Cruve lhier) is ppl ed to ul e s which show an X ray image that p tially or compl etly trave ses the mu cle and p oduces a pe it eal s velli g A d vert culum repre nti g the nterio of an ext o ized ulcer which r mai atached to th stom ch by only a narr v anal nay be difficult t ho w th the X ray Fal e projections kl d hes due to ontr ctio or defo mat on by g t t p g t itis or spa m v a y fom dav to dav an l may d ppear lter the dminstration of atropine but crater shad s d ectly due to an ulcer are pra tically c sta t in contour and site The X r y confirm the med cal cu e of ulcers The p ject g mag type of ulcer occur almost exclu ely on the lesser cu ature Ulcers in the pyl c eg on rarely present caver s shadows In cases of duodenal ulce complex de

formities are noted more often than typical cavity shadows and the therapeutic progress is difficult to follow roentgenologically.

The authors report twelve cases of cavernous ulcers of the lesser curvature with X ray images ranging from a spur to a swollen ampulla and varying ulcerations which just penetrated the muscle or burrowed to or destroyed the peritoneum so that the base was formed by a sclerohypomatous plaque or in adjacent organ. In seven cases there were spurs or cups and in five true niches of Haudek. Some of the ulcers emptied rapidly. Others filled spontaneously or did not fill according to the relation of the mouth to the folds or were revealed by a suspended spot visible after evacuation of the stomach. A shadow was often seen on the greater curvature in relation to the lesion. The ulcers had produced the classical symptoms and had existed for months or many years.

The treatment consisted in rest and lactoferrin diet and the administration of a 70 per cent bismuth mixture morning and evening for many months and of from 1 to 1 1/2 mgm of atropine per day. When possible the atropine was given subcutaneously. The authors prescribe kaolin bicarbonate of soda or the Sippey method only to relieve pain. Lactoferrin foods are disinfected by cooking and combat the congestion of the gastritis and the ulcers. The bismuth protects the mucosa from the mucous flow and is bactericidal, antisecretory and antispasmodic (hypovagotizing).

In the cases reviewed the improvement was usually very rapid. The subjective amelioration closely paralleled the objective changes shown by the X ray. Generally in ten days the X ray image was notably modified; a niche was reduced to an ampulliform projection and a spur was thinned and broken. Soon the cavernous image looked like a little cone which was lifting the wall or like a comma hanging from the wall. Roentgenograms revealed persistent deformities inaccessible to direct examination. Healing was considered complete when all trace of the cavity was gone. A segmentary rigidity of the lesser curvature at the site of the lesion occasionally persisted for a time as indicated by inability to pleat the stomach wall and by non-propagation of waves on the diseased area. The latter relates only to the lower half because peristaltic waves normally fail in the upper third of the lesser curvature.

The ulcer evolution varied with the severity of the lesion and diverse associated factors such as parietal infection, oedema and neurovascular trouble. Healing was completed in from six weeks to three or six months or an average of two months. Feissly has reported rapid results in cavernous ulcers of the lesser curvature obtained with insulin which elevate the blood alkalies. From the standpoint of the direct gastric action the author considers the use of insulin in gastric ulcer illogical as insulin is a most active hypervagotonic and gastric ulcer is accompanied by intense vagus irritation.

Einhorn and Damade have obtained rapid amelioration and cure in deforming duodenogastric ulcers by duodenal feedings. Moutier and Porcher's treatment relieves the ulcers equally quickly and in many cases gives clinical and roentgenological healing in from five to eight weeks. However duodenal feedings are indispensable in cases requiring absolute gastric rest.

The authors note that cavernous ulcers treated medically recover with extreme ease at times and they emphasize the advisability of the prolonged combined use of bismuth and atropine which surpasses all other ulcer treatments and is especially superior to the use of complex alkalies. Only certain ulcers of the lesser curvature resist medical therapy. After simple gastroenterostomy the authors have often noted the regression of the cavernous images with the rapidity and progress obtained by medical therapy alone. Their treatment is most effective in ulcers at a distance from the pylorus. For pyloric or duodenal ulcers surgery is preferable to purely medical therapy. To the argument that a mucus plug or a clot may give deceptive X ray evidence of cicatrization of a cavernous ulcer the authors state that the ulcers in which progressive regression is followed regularly are not ulcers closed accidentally and temporarily, also that the roentgenological and clinical healing are parallel. The ulcer defect occurs in tissues not only sclerous but also very oedematous especially during the inflammatory attack. Hence the subsidence of the interstitial inflammation and the connective tissue proliferation of the base with the swelling of the walls and epithelial growth on the surface quickly reduce the depth of the cavity which then only awaits total effacement and cicatrization.

Ulcer recurrences evolving in long periods are evidenced by giant ulcers. In the case of an elderly patient the authors observed the return of ulcer symptoms with re-appearance of a cavernous image after a clinical cure of eighteen months' duration. They believe that in addition to the continuous ulcers with interrupted clinical manifestations new ulcers often form on the cicatrix of a former ulcer or in some other area not yet eroded. They consider that gastric ulcers evolve much more rapidly than was formerly believed. Even craterous ulcers may be old in only a few months and may become cicatrized or perforate in a few weeks.

New gastric symptoms developing many months after the clinical and roentgenological healing of an ulcer may be due to persistent ptosis gastritis, perigastritis or neuritis.

WALTER C. BERRY, M.D.

Nordmann O. Corrective Surgery Following Unsuccessful Operations for Ulcer (Korrigierende Operationen nach erfolglosen Ulceroperationen). *Zentralbl f. Chir.* 1927 h. 1893.

Nordmann says that the indications for a new operation in the cases of patients previously operated upon for gastric ulcer depend upon the sever-

Repeated vomiting that lasts for days and endangers life may be due to a vicious circle following an improperly done gastro enterostomy. Either the loop of bowel leading to the stomach is too long or there is an acute kink in the bowel at the point of anastomosis.

Vomiting may be due also to infection of the peritoneum at the line of suture or to adhesions of the suture line. Short believes that the presence of adhesions between the anterior and posterior suture line of the mucosa is one of the common causes of persistent vomiting after gastric operations. In this type of vomiting there is no bile in the vomitus as none can enter the stomach. Two cases of this kind are cited.

To prevent the occurrence of adhesions Short inserts a corrugated rubber dam between the anterior and posterior sutured mucosa.

I EDWARD BISHOP M D

Ginzburg L. and Beller A. J. Non Metallic Perforating Intestinal Foreign Bodies. *Ann Surg* 927 1918 98

Perforation by small non metallic foreign bodies such as fish bones, chicken bones or slivers of wood occurs most frequently in the large intestine especially at the flexures and in the cæcum.

The condition is more frequent than it is generally believed to be. Of the twelve proved cases occurring at the Mount Sinai Hospital, New York, within the last ten years, nine were discovered in the last three years. The difficulties in recognition are due to the lack of a leading history, failure to visualize this type of foreign body by the X ray, and the wide variety of clinical manifestations.

The perforation may manifest itself in various ways. The most common signs and those of most importance to the surgeon are symptoms of acute peritonitis, localized intra abdominal abscesses, intra abdominal usually pericolic inflammatory tumors, tumor of the abdominal wall, abscess of the abdominal wall, and inflammation and obstruction in a hernial sac.

In pericolic tumors which do not invade the intestinal lumen or cause stenosis, the possibility that the mass is a foreign body tumor should be considered. Recognition of this condition will decide the surgical indication and render a hazardous operation unnecessary, since removal of the foreign body and drainage will suffice to effect a cure.

JOHN J. MALONEY M D

Puccinelli V. Tumors of the Small Intestine (Tumor dell' intestino tenue). *Arch Ital di Chir* 1917 XVIII 273

This article is based on twenty three tumors of the small intestine, seven carcinomata, two sarcomata, even tumors of lymphatic tissue which the author classifies as round cell lymphosarcomata, one fibroma, and six tumors of doubtful interpretation, one being found in a case of so called intestinal pneumatosis. The neoplasms were discovered in the

course of 24,000 operations. In the same series about 500 tumors of the stomach and 450 tumors of the colon and rectum were found.

Carcinomata are frequent in the stomach, colon and rectum, but very rare in the small intestine. Sarcomata, though rare as compared with carcinomata, are more frequent in the small intestine than in the rest of the digestive tract.

A clinical diagnosis of the different forms of tumor of the small intestine is impossible. Intestinal neoplasms generally do not cause symptoms until some late complication develops, such as stenosis, occlusion, invagination or perforation. Histological diagnosis of the different forms of carcinomata can be made. There has been a great deal of discussion of the nature of the tumors of lymphatic tissue in the small intestine, but the author classifies such growths as true tumors and calls them lymphosarcomata.

The chief value of this article lies in the detailed histological descriptions of the tumors and the excellent anatomical and histological illustrations.

AUDREY C. MORGAN M D

Key Aberg K. Contribution to the Knowledge of Myomata in the Small Intestine. *Acta Chir Scand* 927 1911 61

A man sixty five years of age had noticed a swelling in his abdomen one month before his admission to the hospital, but he had otherwise been free from symptoms except those due to sluggishness of the bowels.

Examination revealed a smooth and elastic abdominal tumor the size of a child's head which extended from slightly above the umbilicus almost down to the symphysis. The Weber test was found positive in the faeces and there was marked secondary anemia.

At laparotomy the tumor was discovered to be so intimately connected with a loop of the small intestine that it was impossible to free it. The intestine was therefore resected. The tumor weighed nearly 1,280 gm. and was of a type intermediate between a subserous and a submucous growth, as almost one fourth of it was within the intestinal lumen and about three fourths was outside the intestinal wall. The microscopic picture was that of a cellular fibromyoma which probably had arisen from the innermost layer of the tunica muscularis.

In the available literature the author has found the reports of even similar cases.

Delrez L. Carcinoma of the Small Intestine. Four Personal Cases (Cancer de l'intestin grêle. Quatre cas personnels). *J. de Chir. et* 4 S. Belg. de l'ir. 92 9.

Carcinoma of the small intestine is rare. Hintz in 1911 collected the records of fifty two cases, eight of which were autopsy reports. He studied the condition thoroughly and concluded that the most frequent site of this tumor are the jejunum and the terminal ileum. The patients are seen by the surgeon because of obstruction symptoms. As

lymphatic tension; slow there is sufficient time for efficacious treatment.

Defrez has not made a statistical study of the condition but reports a few personal cases making short comments on each.

Case. Carcinoma of the ileocecal area. The patient a male of sixty-two years had been treated for an appendicitis which had recovered from post-ulcer abdominal pain. He had been four months healthy but six weeks of severe abdominal pain which at times rendered him moribund. There had been loss of weight. Physical examination and roentgenoscopic study were negative. The tumor was located at the ileocecal junction and the bowel resected. The patient died three months later from an epigastric tumor. Necropsy was made.

Case. Stenosis of the ileocecal junction of the jejunum. The patient a male of fifty-six years who had previously been in good health had suffered from abdominal pain in the past three years. The tumor was located at the ileocecal junction and the bowel resected. The patient died three months later from an epigastric tumor. Necropsy was made.

Case 3. Carcinoma of the ileocecal junction. The patient a male of sixty-two years had been in good health for four months. The tumor was located at the ileocecal junction and the bowel resected. The patient died three months later from an epigastric tumor. Necropsy was made.

Case 4. Carcinoma of the jejunum. The patient a male of sixty-four years had been in good health for four months. The tumor was located at the jejunum and the bowel resected. The patient died three months later from an epigastric tumor. Necropsy was made.

genologist favored a diagnosis of peptic duodenal adhesions but could not localize the lesion. An annular stenosing tumor of the jejunum was found about 40 cm below the duodenojejunal junction. Resection was accomplished and an anastomosis made. No glands were found. The phantom tumor was thought to be due to contractions of the hypertrophied intestine proximal to the tumor.

MICHAEL MASON, M.D.

Case of man W. J. Duodenal Diverticulum. Case of man W. J. Duodenal Diverticulum. Case of man W. J. Duodenal Diverticulum.

Diverticulum of the duodenum. Diverticulum of the duodenum. Diverticulum of the duodenum.

The diverticulum is usually found late in life and is present to be much more common in females than in males. The diverticulum varies in size from that of a pea to that of a small orange. Over half of them occur in the second portion of the duodenum. Some of the latter may be dilations of the ampulla of Vater.

Diverticula are false diverticula as they do not contain all of the coat of the bowel. The mucosa is submucosal and is present but the muscular coat is lacking. They are in fact true herniations of the mucosa through the muscular coat. According to their theory most generally accepted they are either true or false diverticula as they are enlarged by the symptoms late in life. The fact that they are congenital is supported by the fact that they have been seen in the embryo in the jejunum. In the jejunum they are associated with the diverticulum of the jejunum. In the jejunum they are associated with the diverticulum of the jejunum. In the jejunum they are associated with the diverticulum of the jejunum.

Small diverticula die due to adhesions or stricture of the gall bladder and cause more frequent in the first position of the duodenum.

The pathological changes that may occur in duodenal diverticula are similar to those occurring elsewhere in the digestive tract. They consist of acute or chronic inflammation, perforation and secondary changes in the pancreas and liver. Carcinoma arising in duodenal diverticula is apparently rare.

Diverticula frequently do not produce symptoms. When they do the picture is usually so general and atypical that the diagnosis cannot be made clinically.

The diagnosis is usually made during a roentgen examination. Very careful and repeated fluoroscopic examination is often necessary. The differential diagnosis is usually difficult except in cases of penetrating ulcers.

Operation is advisable in well selected cases in which the diverticulum appears to be the cause of symptoms which are severe enough to warrant the risk and other methods of treatment have failed. Diverticula arising from the anterior surface of the duodenum are easily approached but those springing from the posterior surface are often closely related to the pancreas and are difficult to operate upon. The operation of choice is excision invagination of the sac and gastro enterostomy.

CYRIL J. GLASPEL, M.D.

Wilkie D. P. D. Duodenal Ulcer in the Female
Lancet 1927 cxxvii 1 28

Statistics from the Royal Infirmary of Edinburgh prove that duodenal ulcer is a much more common lesion today than it was twenty years ago.

Duodenal ulcer is much more common than gastric ulcer in both sexes. It occurs at all ages and is not as rare among females as is generally believed.

In 35 per cent of the cases of duodenal ulcer in females the history and symptoms were not classical. Flatulence associated with attacks of epigastric pain not related to eating was common and often suggested cholecystitis. Wilkie terms this clinical picture the cholecystoduodenal syndrome. The absence of the typical hunger pangs in the female is best explained by the habit of women engaged in household duties of taking food between meals. The male with fixed hours for work, has longer fasts and less opportunity to ward off hunger pain.

Occasionally a diagnosis of cholecystitis with stone has been changed to that of duodenal ulcer by means of cholecystography combined with the barium meal test. In this procedure a preliminary X-ray examination of the gall bladder is followed by the intravenous injection of tetra iodophenolphthalein. On the following day a second roentgenogram is made of the gall bladder area. A barium meal is then given and a roentgenogram of the stomach and duodenum is made. A little later a fatty meal is given and two hours later a final roentgenogram is made of the gall bladder. By means of these four films valuable diagnostic aid may be obtained.

In the case of the female the relatively mobile duodenum makes gastroduodenostomy an easy and safe operation and this or gastrojejunostomy is the operation of choice. When there is an associated gastric ulcer excision of the ulcer combined with gastro enterostomy is usually most satisfactory. The appendix was found to be diseased and was removed in approximately one third of the cases. In cases of simple ulcer resection of either the stomach or duodenum or both is not necessary.

CYRIL J. GLASPEL, M.D.

Koch J. A Case of Retroperitoneal Hematoma After Duodenal Resection (U Fall an retroperitoneale Hämatom nach Duodenektomie)
Arch f. kl. Chir. 1927 ccli 82

In the case of a man thirty one years of age the first part of the duodenum and the pyloric part

of the stomach were resected for a callous crater shaped ulcer between 4 and 5 cm. from the pylorus which had perforated into the pancreas. The patient had had symptoms of duodenal ulcer for four years. The base of the ulcer was not removed being merely cauterized. The rest of the duodenum involved was resected and the stump covered by the pancreas and its capsule. It was necessary to do a Billroth II with a Braun entero anastomosis because the descending part of the duodenum could not be sufficiently mobilized.

Before the operation was finished a retroperitoneal hematoma was noticed but was regarded as of no consequence because it failed to become larger while it was watched. Five hours after the operation the patient suddenly became restless, markedly anemic and pulseless but later his condition improved without operative interference. Five days later he suddenly developed chills, a high fever and pain under the right costal margin where a tumor the size of a fetal head could be palpated. Three days later about a liter of coagulated blood was evacuated from this tumor through the operative incision. Despite drainage for a day a fist sized fluctuating mass then developed in the left inguinal region and the temperature rose to 39 degrees C. Drainage evacuated half a liter of coagulated blood from the retroperitoneal space.

Koch believes that the source of the hemorrhage was a venous plexus in the serosa, free posterior wall of the duodenum where tearing readily causes bleeding which is difficult to stop. The brittleness of the blood vessels in chronic inflammations must also be considered as an etiological factor.

BERGMANN (Z)

Schmieden V. and Westhues H. The Clinical Aspects and Pathology of Polyps of the Colon and Their Clinical and Pathologic Anatomical Relationship to Carcinoma of the Colon (Zu Klinik und Pathologie des Dickdarmpolypen und deren klinischen und pathologischen anatomischen Beziehungen zum Dickdarmcarcinom) *Deutsche Zeitschr. f. Chir.* 1927 ccli 1

Polyps of the colon are divided by the authors into three groups according to their histogenesis and malignancy. Those of the third group are characterized as precancerous because they nearly always become true carcinomata and often do so before they have reached the size of a pea. The transition from the typical slender regular polyp cells to a precancerous condition occurs on the whole surface of these polyps. The regular arrangement disappears, the cells become plumper and the nuclei become irregular in position and shape. The findings are of decisive importance in the examination of biopsy material. Not alone the character of these cells but also the whole picture is characteristic of the complex precancerous state.

The authors correlate the various histological findings with the etiology, diagnosis, therapy and prognosis. They call attention to the fact that in diffuse

lymphatic tension is slow there is sufficient time for efficacious treatment

Delreze has not made a statistical study of the condition but reports a total of four personal cases making short comments on each

Case 1. Carcinoma of the epithelial pearls in the ileum. The patient a man of sixty-two years had been treated for an apparently had recovered from peptic ulcer about three years previously. For four months he had been having crises of severe abdominal pain which at times required morphine. There had been moderate loss of eight Phical examination and oentgenoscopic study were negative. The tumor was discovered at laparotomy and the bowel resected. The patient died three months later from an epigastric tumor. No autopsy was made.

Case 2. Stealing cylindrical cell carcinoma of the jejunum. The patient a man of fifty-seven years who had previously been in good health had suffered from abdominal pain and colic for the past three or four months during which time she had lost considerable weight. In the past two weeks she had vomited times. On examination a tumor was felt to the left of the umbilicus and visible peristalsis was noted. The obstruction of the colon although the carcinoma at laparotomy was forate jejunal ulcer as found the perforation had been closed by the omentum. No glands were discovered. The affected bowel was resected and anastomosis made. The patient is still alive and in good health nine months after the operation.

Case 3. Carcinoma of the duodenal jejunal flexure. A woman sixty years of age had hadague gastric and epigastric distress for four months. A small epigastric mass as removed with light be an epiplocele until histological examination revealed it to be an adenocarcinoma. The symptoms were not relieved by the operation and ultimately vomiting occurred. On examination two months after the first operation the epigastric mass was found to have recurred. An indefinite resistance was felt in the epigastrium but was shown oentgenologically not to affect the stomach or duodenum. Despite the negative ray findings a diagnosis of obstructive high up in the small bowel was made and laparotomy was performed. A carcinoma of the duodenal jejunal flexure with numerous glandular metastases as found. Duodenojejunostomy afforded the patient relief until her death from ascites and tetanus five and one-half months later. Worthwhile of special note in this case were the early umbilical metastases the negative oentgen ray evidence and the relief afforded by the anastomosis.

Case 4. Carcinoma of the jejunum. A woman fifty-four years of age had had symptoms of intestinal obstruction for a number of months. There was no tenderness and no constipation. The absence of vomiting indicated that the lesion was below the duodenum or jejunum. An unusual tumor was felt occasionally in the epigastrium. A diagnosis of possible stenosis of the ileum was made. The patient

generally favored a diagnosis of periduodenal adhesion but could not localize the lesion. An annular stenosis of the jejunum was found about 40 cm below the duodenojejunal flexure. Resection was accomplished and anastomosis made. No glands were found. The phantom tumor was thought to be due to contractions of the hypertrophied intestine proximal to the tumor.

M. H. ELLIOTT, M.D.

Cyde mai W. J. D. odenal D. I. et ul C. d. M. I. J. 9. 455

D. odenal live t. c. l. a. ere first described in 1710 as a life-threatening means of the roentgen ray.

The condition usually found late in life and is applied to benign and malignant lesions in males and females. The history varies in size from that of a pea to that of a small orange. Over half of them occur in the second portion of the duodenum. Some of the latter may be dilatation of the ampulla.

Duodenal diverticula are false diverticula as they do not contain all of the coats of the bowel mucosa. The submucosa is present but the muscular coat is lacking. They are in fact true herniations of the mucosa through the muscular coat.

They are generally accepted as either directly or indirectly congenital and producing symptoms late in life. They are congenital supportively they have been demonstrated in (1) the embryonic

chicken and associated with other organs and (2) the region late where the pancreatic ducts are duplicated. The theory that they support the effects of the enteric muscle all eaked by the diverticulum to appear late in life they have been found obstruction due to a new been found to expectant.

Diagnosis is made by the history of the diverticulum from ulcer or frequent in the first part.

The pathologic changes in the diverticulum are diverticula which are in the digestive tract and inflammation changes in the diverticulum.

Duodenal diverticulum

symptoms are vague and made clinically.

The diagnosis is made by the history of the diverticulum and the changes in the diverticulum.

sided syndrome. Follow up medical therapy should be used if possible. When operation is performed in cases of suspected chronic appendicitis, an adequate exposure should be made. The appendix should be removed even if it is apparently healthy as it may contain the slight or chronic lesions which some surgeons (among them Okunczyk) consider to be the initial factor in the right sided syndrome. Any distinct adherent bands—especially bands from the lower end of the small intestine and the right colic angle, a Lane link, or a Jackson membrane—should be freed.

If only a thin dilated atonic caecocolon is found fixation and plicature should be avoided. In such early cases without organic parietal lesions but with ptosis and distinct dilatation of all of the right large intestine from faulty attachment slight bariun retardation and intermittent painful crises of caecal distention only the Duval (regiore) operation is justifiable. Fixation usually gives merely temporary relief and is followed by new adhesions which may produce further symptoms. It is not physiologically correct to plicate or to fix an organ such as the caecocolon which must contract constantly and freely. The X ray reveals that after plicatures and fixations the right large intestine has irregular dentate borders and is deformed and immobile. If chronic appendicitis is associated with caecal stasis of more than thirty hours typhlocolitis and secondary tight dense pericolic adhesions if the patient has already been operated upon unsuccessfully and if medical treatment has proved either insufficient or impossible a right colectomy should be done before the development of more or less intense parietal lesions of ulcerous or perforating typhlocolitis.

Operation is contra indicated when the patient is psychopathic neurasthenic or old or is suffering from general ptosis of which the syndrome of the right iliac fossa is a part. Total colectomy is a serious operation and is justified only in the presence of total megacolon with total stasis—a rare lesion—which is manifestly organic and not functional. In general and functional stasis and constipation total colectomy has neither clinical nor experimental justification.

WALTER C BURKET MD

WALTER C BURKET M D

Goyen J R and Coors L J Tuberculosis of
the Retrocecal Glands Tuberculous Peri
appendicitis (Tuberculose des retrocecalen
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Primary tuberculo is of the mesocolic and mesen
teric glands is not frequent The authors describe
a case in a man of fifty years About thirty years
before the patient was admitted to the hospital he
began to have pain in the pine This was followed
by scolio which slowly increased About two
weeks before his admission he began to have dull
pain in the abdomen which finally became localized
in the right iliac fossa He stated that he had not
suffered from nausea or vomiting and thought he
had had only slight fever At the time of his ad

mission to the hospital the pain was intense and continuous

Examination showed scoliosis with the concavity to the left. No pain was felt on percussion of the spinous processes or on active or passive movement. There was pulsation in the veins of the neck and the cervical glands were slightly enlarged. No signs of pulmonary tuberculosis were found. There was diffuse pain in the right iliac fossa without muscle rigidity. Palpation revealed a long tumor parallel with Poupart's ligament and extending from four fingers breadth below the costal arch to two fingers breadth above the middle of Poupart's ligament. This tumor was hard and irregular and painful on pressure. It did not move with respiration or a change of position and could be moved only slightly. When the colon and caecum were distended it disappeared and could be demonstrated only by deep palpation. Roentgen examination showed that it was back of and below the colon. A diagnosis of retrocaecal tuberculous adenitis was made.

Operation revealed fixation of the cæcum in the right iliac fossa and induration of its posterior wall. The cæcum was exteriorized and the appendix amputated near its base. In the indurated portion of the posterior wall of the cæcum there were caseous fragments. The caseous tissue was removed and the rest of the appendix resected. A drainage tube was then introduced. Uneventful recovery ensued.

In chronic appendicitis there may be acute attacks resembling this patient's illness. Tuberculous retrocaecal lymphadenitis is often confused with appendicitis and sometimes a diagnosis before operation is impossible. In the case reported the authors made the diagnosis from the periodicity of the pain with attacks which receded spontaneously, the examination of the blood which showed anaemia and no hyperleucocytosis, the hard only slightly movable and slightly painful tumor and the findings of specific tests including the Hutinel Bard test which showed tuberculosis. Nevertheless even with such evidence only a probable diagnosis can be made.

ALFRED C. MORGAN, M.D.

AUDREY C. MORGAN M.D.

Trotter W The Symptomatology and Diagnosis
of Chronic Appendicitis *Brit M J* 927 11

Dowden J W Diagnostic Difficulties in Chronic
Appendicitis *Brit Med J* 92:1 966

Bonney V Gynecological Considerations in
Chronic Appendicitis *B I M J* 1927 11 666

Walton A J The Etiology and Sequels of Chronic Appendicitis *Brit M J* 927 ii 1 68

TROTTER The diagnosis of chronic appendicitis is aided by local signs such as right iliac pain tenderness increased resistance and increased tension of the right rectus muscle. A definite difference in the tension of the two recti is probably the most trustworthy sign. Considerable reliance is to be placed on a sudden momentary sharp stabbing pain in the appendix region. This often occurs while the patient is walking. In patients who have given this needle pain complaint the appendix at

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Goyena J R and Corsi L J Tuberculosis of the Retrocaecal Glands Tuberculous Peritendinitis (Tul recul is le los ganglios retrocaecale peritendinitis tuberculosa) *Rev Soc de med interna y Soc de ts* 1 1927 iii 229

Primary tuberculosis of the mesocolic and mesenteric glands is not frequent. The authors describe a case in a man of fifty years. About thirty years before the patient was admitted to the hospital he began to have pain in the spine. This was followed by scoliosis which slowly increased. About two weeks before his admission he began to have dull pain in the abdomen which finally became localized in the right iliac fossa. He stated that he had not suffered from nausea or vomiting and thought he had had only slight fever. At the time of his ad-

mission to the hospital the pain was intense and continuous.

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ALBERT G. MORRAN M D

Trotter W The Symptomatology and Diagnosis of Chronic Appendicitis *Brit M J* 1927 i

1063
Dowden J W Diagnostic Difficulties in Chronic Appendicitis *Brit M J* 1927 ii 1066

Bonney A Gynecological Considerations in Chronic Appendicitis *Brit M J* 1927 ii 1066

Walton A J The Etiology and Sequels of Chronic Appendicitis *Brit M J* 1927 ii 1068

TROTTER The diagnosis of chronic appendicitis is aided by local signs such as right iliac pain tenderness increased resistance and increased tension of the right rectus muscle. A definite difference in the tension of the two recti is probably the most trustworthy sign. Considerable reliance is to be placed on a sudden momentary sharp stabbing pain in the appendix region. This often occurs while the patient is walking. In patients who have given this needle pain complaint the appendix at

operation is found to have undergone definite pathological changes

General abdominal symptoms of chronic appendicitis are flatulent dyspepsia and irregular motility and secretion of the colon. In childhood there may be in addition recurrent attacks of vomiting or diarrhoea with bloody attacks. Intolerance of certain foods and fever.

The more common complications of chronic appendicitis are chronic cholecystitis, peptic ulceration and secondary infection of the adnexa.

DOWDEN In children and the young a chronic appendicular lesion should always be suspected when there is a history of listlessness, capricious appetite, colicky pains, which perhaps increase or omit. The cyclic vomiting of acidosis must be differentiated.

BONNEY Appendicular pain may be attributed to the pelvic organs and conversely, pain originating in the pelvic organs may be diagnosed as arising from the appendix. The latter fact is more common than mistake.

Chronic appendicitis or a blood (menometrial) cysts and a drag on the right ovarian ligament as a retroversion of the uterus commonly cause pain simulating chronic appendicitis.

It is most important in all cases of suspected chronic appendicitis to determine the position of the uterus and the parts adjacent to it in order to exclude the possibility that the pain is due to ligamentous drag. It should be remembered that parietal ligamentous irritation is always marked by accentuated local occurrence only when the patient is up and about. Recumbency causes it to disappear and to become much less marked. To estimate uterine or ovarian displacement properly the patient should be examined in the standing position.

WALTON Chronic appendicitis is not a primary disease; it occurs only after an acute attack.

I 738 Lapa of mics for pathological condition in the upper abdomen which a large incision made for abdominal exploration of appendectomy alone in only 73 (approximately 4 per cent). The appendix should be fully examined in every case but removed only if it has definite evidence of disease. If it is infected, flamed, or kelly thickened, it is tender or ontas may, once conditions of appendectomy indicated but mild fibrosis or the presence of membranes filamentous bands or sufficient evidence of disease to warrant this procedure. **CIRLES F DU BOIS MD**

Carnett J B Chronic Pseudo-Appendicitis Due to Intercostal Neuralgia. *J. H. S.* 97 1 579

Appendectomy fails to relieve the symptoms of chronic appendicitis in from 10 to 20 per cent of the cases. The symptoms may frequently be relieved by a right iliac parietal tenderness.

Stanton discusses his cases of failure into two groups: (1) those of young women complaining of

right iliac pain which is usually associated with constipation and (2) those in which appendectomy was done unsuccessfully for the relief of vague abdominal symptoms. Operation in the first group usually reveals a normal appendix and an enlarged mobile caecum.

Lichty advises against making a diagnosis of chronic appendicitis in the absence of a history of characteristic acute attacks. He believes that poor results from operation for chronic appendicitis represent not operative failure but a diagnostic mistake.

Ca nett emphasizes that the decision as to whether or not the patient had chronic appendicitis cannot be based upon the pathologist's study of the removed appendix. The microscopic test must be replaced by the clinical test of whether or not the symptoms for which the patient sought relief were cured by the appendectomy. If relief was not obtained the condition was a pseudo-appendicitis not a true chronic appendicitis.

In Carnett's opinion on chronic appendicitis will soon be generally regarded as either non-existent or it is not claimed to be by many pathologists or as an almost universal affection due largely to a preceding attack of acute appendicitis but more commonly the result of derangement of the intestines which are incidentally increasing and develop too gradually to cause clinical symptoms. Pain and tenderness in the right lower quadrant of the abdomen have been attributed to numerous other causes besides appendicitis but no cause common to all cases has been discovered.

From a careful study of these cases **Carnett** has come to the conclusion that the majority of the symptoms of chronic appendicitis have been simulated by pain and tenderness in the anterior abdominal wall. To differentiate between tenderness in the abdominal wall and tenderness within the abdomen it is necessary to palpate while the patient holds his anterior abdominal muscles as tense as possible. Tense abdominal muscles keep the fingers from pressing the viscera. The usual procedure of palpating with the muscles relaxed is a possible clinical tenderness only when the fingers press rather deeply into the abdomen. This leads to the conclusion that any tenderness noted in the abdomen in the author's emphasis is that the uterine application of the test described in all cases of abdominal tenderness demonstrates that tenderness occurs in the abdominal wall more frequently than in the abdomen.

Tenderness noted when the abdominal muscles are relaxed may be of either parietal or intra-abdominal origin. Tenderness which is present when the muscles are relaxed and absent when the muscles are tense is due to an intra-abdominal cause. Tender cases which present both when the muscles are relaxed and when they are relaxed is of parietal origin. The degree of tenderness is variable.

When the preliminary examination fails to show evidence of an intra-abdominal lesion further pal-

pation should be more vigorous and areas of mild parietal tenderness should be subjected to poking with the finger at a right angle to the surface. This poking often reveals a parietal tenderness which would otherwise escape notice. Tension of the abdominal muscles may be maintained by having the supine patient raise his heels from the supporting surface with his knees extended.

Chronic pain and tenderness of the anterior abdominal wall are due most commonly to intercostal or costolumbar neuralgia. The entire nerve supply of the anterior abdominal wall is derived from the lower seven intercostal and the first lumbar nerves and the suggested terminology is meant to include all lesions of the spinal cord meninges, vertebræ and nerve trunks which can give rise to pain and tenderness in the area supplied by these nerves. Because of the variability in the extent of the involvement many conditions may be closely simulated.

The presence of nerve involvement is proved by the demonstration of tenderness by pinching of the abdominal skin and fat pressure on intercostal nerve trunks and pressure over areas supplied by intercostal nerve fibers away from the abdomen.

A triangular area in the right lower quadrant bounded by the midline, a transverse line from the umbilicus to the crest of the ilium and a line parallel with Poupart's ligament is found to have a fairly uniform degree of tenderness both when the muscles are relaxed and when they are tense. In addition, tender points are to be found along the outer border of the rectus muscle at the points of exit of the intercostal nerve fibers supplying the rectus muscle. In the interpretation of tenderness of the abdomen these tender points must be borne in mind.

The author disagrees with the view of Mackenzie, Head and others that skin hyperæsthesia is due to a visceroparietal sensory reflex and is therefore indicative of underlying intra-abdominal disease.

Even when the hyperæsthesia as evidenced by the pinch test is confined to the right lower quadrant of the abdomen it is very common to find tenderness of the intercostal nerve trunks extending as high as the sixth or the fifth or even up to and including the first. Palpation for such nerve trunk tenderness is conducted by placing the finger tip in an intercostal space along the anterior or anterolateral wall of the chest and while making pressure upward against the lower edge of the rib carrying the finger back and forth in the interspace.

Hypersensitiveness of the terminal branches of the first and second intercostal nerves which are distributed by way of the intercostohumeral nerve to the upper posterior part of the arm can be demonstrated by pinching the skin, fat and muscle in the region of the posterior axillary fold.

When the twelfth intercostal and first lumbar nerves are affected there are two other areas outside the limits of the abdomen which are often found to be hypersensitive. One is an area about 1 in. wide in the upper anterior thigh parallel with

Poupart's ligament which is supplied by some of the terminal fibers of the ilioinguinal branch of the first lumbar nerve. The other is a V shaped area in the buttock below the iliac crest which is supplied by the iliac branches of the twelfth dorsal, the iliohypogastric and the ilioinguinal nerves. The demonstration of tenderness in the latter area is a most valuable aid in demonstrating that tenderness at McBurney's point is parietal rather than intra-abdominal. This area may be compared with a circular area above the trochanter which is very rarely hypersensitive.

Many cases of parietal neuralgia do not present the complete picture described by Carnett. Skin tenderness to the pinch test or nerve trunk tenderness or both may be absent even when muscular tenderness is quite marked. The most constant sign of the condition is the tenderness revealed by the poking finger over muscles voluntarily made rigid.

Chronic strain of the lumbar spine and sacroiliac joints due to lumbar lordosis causes tenderness of the vertebral bodies and disks and of the sacroiliac joint. As this tenderness is elicited by deep pressure in the region of McBurney's point and the corresponding area of the other side it is frequently interpreted as indicating chronic appendicitis.

Viscerotopic persons who constitute the majority of those suffering from chronic pseudoappendicitis can usually be classified as having one of the following conditions: (1) digestive disturbances due to ptosis and intestinal stasis; (2) deep tenderness at or near McBurney's point due to chronic strain of the lumbar spine and sacroiliac joints; or (3) intercostal neuralgia of the anterior abdominal wall due to lumbar lordosis and possibly to intestinal toxæmia. Patients with these conditions are not relieved by operation and the great majority may be subsequently shown to have the diagnostic signs of intercostal neuralgia. Operation is often followed by improvement but ultimately the symptoms recur.

In a careful review of cases and of the literature the author was unable to find a syndrome which in his opinion warranted the diagnosis of chronic appendicitis and could be relieved by operation. He draws the following conclusions:

1. Chronic appendicitis as ordinarily seen under the microscope does not cause clinical symptoms.

2. The clinical symptoms that have been ascribed to chronic appendicitis are not caused by the appendix and are not cured by appendectomy.

3. Patient with chronic pain and tenderness in the right side present somewhat diverse clinical pictures that are uniformly consistent with intercostal neuralgia but are not consistent with any other single affection. I. S. PLATT, M.D.

Cutler, C. W., Jr. Postoperative Complications of Suppurative Appendicitis. *Am. J. Surg.* 1971, 60:2.

This article is based on 392 cases of suppurative appendicitis and includes only cases of empyema or gangrene of the appendix, perforation or marked

exudate that were associated with more or less widespread peritonitis or abscess

Of these 39 cases 83 (2 per cent) developed complications. Thirteen hundred and thirty-seven patients were discharged cured and 14 benefited. Forty-one died a mortality of 0.5 per cent. All of these cases survived to eat, as empyemas and operated upon at once, regarded of the hour. The appearance as removal in every case unless the patient's condition necessitated a quick operation. Drainage as established by means of a fenestrated rubber tube or cigarette drainage cases with gangrene, up to a poultice or eropulent exudate. No attempt at mechanical cleansing of the abdomen was made although suction employed to remove septic exudate.

The most serious complications peritonitis. In cases with peritonitis on all mouth feeding as stopped the patient placed in the Fowler position on saline lavage given by hypodermic syringe or glucose normal solution given intravenously. Indistinctly was a minority of peritonitis either by the Murphy method or small intestine anastomosis. Morphew's duct colonoscopic irrigation was employed but was given by hypodermic lavage. Gallmilk and milk enemata were administered. Trauma of the abdomen in the majority. Of the patients with diffuse peritonitis 71 per cent recovered.

A summary of other methods of management included in the discussion.

In eighty-nine cases (46 per cent) a second visit peritonitis developed. In 16 per cent the abdominal sepsis occurred fully developed through the intestinal anastomosis. In eight required a reoperation. Four re-subphrenic, two in the right lumbar gutter, a third in the left lower quadrant. Fifteen of the eighteen patients died. Infection of the abdomen developed in the series. Three local peritonitis, a distal required a reoperation. Mechanical ileus occurred in the case. Cellulitis of the abdominal wall. Peritonitis. Three local peritonitis. Hernia found to have occurred in the case. Icterus developed eight cases. The deaths pulmonary embolism, rupture of the fat liver. No case of fatal sepsis. The following were recognized: ILEUS, ARTERIAL, M.D.

Chandni A. My Method of Rectopexy (Contributed)
Allotted to the 97th 3rd (Prize)

The author first described his method for the treatment of rectopexy in 1908. At that time he had limited it only to the cecum. The next year he modified it in the treatment of patients with rectal prolapse. He expected the operation to be performed in the future. The procedure consists of the removal of the rectum (rectopexy) and the removal of the peritoneal cul-de-sac of Douglas and to the formation of the malconduct of the peritoneum and the fixation of the peritoneum by the peritoneum. The difference between the operation and the other methods is

Both the immediate and the late results in all cases have been excellent. As the operation is extrarectal it does not establish any communication between the intestine and the wound. There is little danger of infection. The operation not only fixes the rectum but puts it in its normal position with an axis different from that of the anus. The suspension of the rectum by fixation of its lateral surfaces to the sacrocrural ligaments accomplishes this purpose perfectly. The lateral fixation fixes the anteroposterior diameter of the rectum giving it its normal form of a cylinder flattened anteroposteriorly. The lateral fixation of the rectum is normally attached to the walls of the pelvis by the levator ani muscles, the middle hemorrhoidal artery and its fibrous sheath, the sacrorectogenital ligament.

The lateral rectum is shortened by the author's method and the acroectogenital aponeurosis which is generally stretched is shortened by the following in the lateral surface of the rectum. The

section of the posterior fold of the fibrous sheath of the rectum and the suturing of its edges to the lateral surface of the rectum greatly strengthen the fixation of the bowel in its new position. The lateral rectopexy and the shortening of the coccygeal raphe which is attached in the pelvis of the rectum. The section of the peritoneal sac does away with the most common cause of recurrence of the rectum, the plane on which the rectum glides. The utility of the external edge of the levator ani and the external sphincter restores the normal condition of the perineum and anus and removes the other causes of recurrence such as constipation and insufficiency of the perineal floor.

DR Y. G. M. R. A. M. D.

Coffey R. C. Cancer of the Pilonic Colon and Rectum. S. G. C. V. 1. 97.

The radical operation first described by the author is applicable to cases of cancer in which the growth involves the ampulla of the rectum proper and is not sufficiently early stage to permit removal of the sigmoid. The modification of the operation of Coffey's operation is applicable to cases in which the growth is located in the rectum proper but too far advanced to permit removal of the sigmoid.

Coffey reviews the cancer operation in the following detail. The method of fixation of the growth of varying extent and in different locations and emphasizes the importance of the use of a large amount of gauze wick as a drain.

N. H. N. C. O. M. D.

Go don W. S. C. The Treatment of Cancer of the Rectum with Radium by Open Operation. P. R. Y. S. M. D. 1. 97. 39.

The cells of the results obtained in the treatment of epithelioma of the skin, mouth and to the use of cancer of the uterine cervix. The author has shown in the study of the effects of radium treatment in carcinoma of the cervix. Fifteen cases were treated by a radium barrage after

open operation. The technique requires a preliminary colostomy with exploration of the abdominal cavity for secondary growths and biopsy from ten to fourteen days before the irradiation.

The rectum was freely exposed by incisions from behind. Needles each containing from 1.5 to 3 mgm of radium element were then inserted at equal distances from each other throughout the lesions with care not to puncture the mucosa. The three sets of hemorrhoidal vessels were also irradiated. Packs with flavine and paraffin gauze were placed over the needle and catheters were inserted into the wound for Carrel Dakin treatment.

The irradiation was continued for from seven to fourteen days and the dosage varied from .268 to 9.840 mgm/hr. The relative value of the use of a small amount of radium over a long period of time and of a large amount of radium over a long period of time with equal milligram hourage is discussed at length but no definite conclusion is reached.

In the cases reviewed 50 mgm for 60 hours a total of 10,000 mgm/hr was the maximum dosage. The screening variations in the technique, complications, infections, and the authors' general impressions are discussed at length.

In selecting cases for radium treatment the author excludes those with metastases in the liver or peritoneum and those with growths above the peritoneal reflection. The most suitable cases are those with lesions low down and posterior.

The method is associated with some risk, but this is not necessarily serious. Rectal carcinoma can be destroyed with radium but lymphatic spread is difficult to check. The results justify an attempt at cure. The author urges co-operation between the various specialists in dealing with this problem. The results in the fifteen cases reviewed are tabulated.

Eight of the patients were benefited. In two no growth can now be detected. Of the two whose condition was operable, one developed a recurrence fifteen months after the operation and died. The other is apparently cured.

In the discussion of this report LOCKHART MUMFERY stated that he inserts radium by means of a special trocar passed through stab wounds in the skin. He uses large doses for a short period. He has had no trouble from sepsis.

HANDLEY stated that in his opinion operation will ultimately be abandoned. He advised irradiation as high up as the sacral promontory. He believes that the method described is superior to irradiation from the lumen of the bowel as it does not prevent the use of his encirclement method and is free from the danger of a reduced or stimulating dose to distant parts.

DONALDSON stated that in his opinion radiotherapy offers much better prospects than surgery and that when the laws governing the differences in action of radium on malignant and non-malignant cells are discovered a tremendous advance will be made in the treatment of cancer.

Λ JAMES LARKIN, M.D.

LIVER GALL BLADDER PANCREAS AND SPLEEN

McQueen, J. M. Direct Observation of the Circulation in the Living Liver. *Brit. Med. J.* 1917, ii, 37.

In studies of the circulation in the living liver McQueen used quarter sized or half sized toads that had been pithed. A lobe of the liver was placed on a glass slide and examined under the low power.

The liver cells and the flow of blood through the capillaries were clearly seen. The investigation showed the presence of a pulse in the capillaries and some of the branches of the hepatic veins. This pulsation was synchronous with the auricular contraction and was produced by retardation of the flow from the liver to the auricle.

These findings confirm the description of MacKenzie in his treatise on the heart.

I. EDWARD B. KOW, M.D.

Leone, P. Sympathectomy of the Hepatic Artery and Its Effect on Wound Healing and on the Biligenic and Glycogenic Function of the Liver. (La simpatectomia dell'arteria portica e i rapporti al processo di riparazione delle funzioni biligene e glicogeniche del fegato). *Arch. ital. di chir.* 1927, iii, 346.

Two series of experiments on dogs are described. In the first the author studied the effect of sympathectomy of the hepatic artery on the repair of simple linear and wedge shaped wounds of the liver. The operation had no perceptible effect on the healing of the wounds.

In the second series of experiments he studied the effect of sympathectomy of the hepatic artery on the biligenic and glycogenic functions of the liver. A disturbance of these functions was noted during the first week after the sympathectomy but within ten days had entirely subsided. The author therefore concludes that the transitory decrease in function was caused by irritation of the visceral sympathetic by the operation.

VUDREX C. MORRIS, M.D.

Buchbinder, W. C. and Kern, R. Experimental Obstructive Jaundice. I. The Growth Factor in Defective Calcification. *J. Clin. Invest.* 1927, xi, 900.

In experiments which were carried out over a period of twelve months on five litters of puppies the authors found that when obstructive jaundice was produced in these animals a fairly uniformly progressive calcium deficiency occurred in the blood serum during the period of growth. They attribute this deficiency to the deposition of lime salts into an increased matrix rather than to progressive failure of calcium absorption. Roentgenograms taken twenty days after the induction of jaundice showed no significant changes in the bones but the omelette after sixty days disclosed marked rarefaction.

The four chief factors responsible for faulty calcification are (1) small storage of calcium (2) a

Fulde reviews fifty two operations for carcinoma of Vater's papilla—fifty one reported in the literature and one of his own. Forty seven operations were done in one stage and five in two stages. The mortality of the one stage operations was 42.5 per cent. Transduodenal extirpation was done in forty two cases, retroduodenal extirpation in two cases, extirpation from the common duct by extroversion of the papilla in one case and resection of the middle portion of the duodenum in two cases.

In the two stage operations the first stage was the formation of a gall bladder fistula in two cases, drainage of the common duct in one case and cholecystenterostomy in two cases. In the second stage transduodenal extirpation was performed three times and resection of the duodenum twice.

There are records of eight radical resections for carcinoma of the common duct, eleven for carcinoma at the juncture of the cystic and common ducts, two for carcinoma of the cystic duct and one for carcinoma of the hepatic duct. The operative mortality in this group was 35 per cent.

The author reports the case of a man forty six years of age who had been jaundiced for five months. At operation a tumor the size of half a cherry was found on Vater's papilla. After mobilization and transverse incision of the duodenum transduodenal extirpation was done. Microscopic examination showed the neoplasm to be an adenocarcinoma extending from the common duct. The cure has lasted for two years. LEHRNBECHER (Z)

Pieri G. The Transverse Incision in Operations on the Bile Tract (*L'incision transversale dans les opérations sur les voies biliaires*) *J de Chir* 1927 xxx 260

In Pieri's operation on the liver or bile ducts or for exploration of the upper part of the abdomen the patient is placed on his back with a sand bag under the lower part of the thorax to produce an exaggerated lordosis. Then a transverse incision is made beginning at the end of the right tenth rib, crossing the midline two fingers breadth above the umbilicus and extending about a finger's breadth farther to the left. In fat subjects the incision may be extended farther and in women with a prolapsed liver it may be made a finger's breadth lower. After section of the subcutaneous tissue andaponurosis a double row of sutures is placed in the rectus to prevent bleeding and retraction and the incision is made between them. The sutures occupy only the inner two thirds of the incision as it is not necessary to extend them to the oblique and transverse muscles. After the peritoneum is incised it is surprisingly easy to bring the lower border of the liver out at the incision. When a drain is necessary it is brought out at the outer angle of the wound.

The advantages of this incision are that it spares the muscles and nerves of the region more than any other type of incision; it gives a better view of the field of operation; it is parallel with the lower border of the liver while other incisions give an access which

is perpendicular or oblique to the region to be operated upon; it permits lateral drainage which is much better than the vertical drainage from the other incisions; the reconstruction of the abdominal wall is very solid and as the drain comes out high and near the costal arch it reduces the possibility of post-operative hernia to the minimum. If a hernia occurs it is easily cured because the direction of action of the abdominal muscles is transverse and therefore much greater solidity is obtained by a transverse reparative suture than by a longitudinal suture.

AUDREY G. MORGAN, M.D.

Sprengell H. Clinical and Anatomicohistological Research on Healed Necrosis of the Pancreas (*Klinische und anatomisch histologische Untersuchungen an ausgeheilten Pankreaslebernekrosen*) *Beitr klin Chir* 1927 cxi 17

At the present time little is known concerning the histological results in the healing of acute pancreatitis. In 1901 Koerte reported a case in which eight years after operation the head of the pancreas was found to be of normal size whereas the body and tail were replaced by thick scar tissue.

The author reports the case of a woman fifty six years of age who was operated upon on August 13, 1914 for acute pancreatitis. The operative procedure included incision of the capsule of the gland, tamponade and drainage of the bursa omentalis, emptying of the gall bladder which contained stones and cholecystostomy. On May 5, 1925 a secondary cholecystectomy with drainage of the choledochus was performed. The pancreas was then found to be grayish white and of normal size. In January, 1926 the patient was re-examined and found to be in perfect health. On February 16, 1926 she was admitted to the hospital in a moribund condition due to strangulation ileus caused by a band of cicatricial tissue extending between the cæcum and the lower part of the small intestine. Soon after her admission she died.

The autopsy specimen of the pancreas, entirely embedded in scar tissue, appeared grayish white and showed a distinct lobulation. In length, breadth and thickness it appeared somewhat reduced. Microscopic examination of sections from the head, body and tail showed normal pancreatic tissue with a great number of islands of Langerhans, some of which were very large. The interstitial portion consisted of loose connective tissue without inflammatory thickening. Only in the middle portion was there an area changed by disease. In this area the intralobular connective tissue was proliferating, sprinklings of small cells were found, the ducts presented decided atrophy and the islands of Langerhans were very large and well preserved.

This case proves that pancreatic tissue has great resistance and is capable of considerable regeneration. The latter is true particularly of the islands of Langerhans which undergo what may be called a functional hypertrophy. BUDE (Z)

GYNECOLOGY

UTERUS

Odentl i W Dangers of Ute osalp ng g ajhy
(U b Gef he d Ut o S lp gr pl) Z
i bl f Gy k 9 7 l 8 4

It has been observed in the Gynecological Clinic at Bonn that ute osalp gog aphy which has proved its importance in gynecology may be followed by certain unfavorable sequelae. In this clinic it did not cause death as in the cases reported by Hellmuth from the Wue bu g Clinic but there were changes which in one case presented at laparotomy the picture of a foreign body granuloma such as is occasionally observed after p affin injections. Peculiar giant cells and necrotic foci were found not only in the lumen of the tube but also on its surface and on the ovary. In the same regions there were smooth walled cavities of various sizes containing fat globules. When the content material remained in the lumen of the tube and did not escape into the abdominal cavity because of occlusion of the abdominal end of the tube disturbances resulted. Disturbances have occurred with every kind of contra t material used.

Since the changes described occurred in spite of the most careful aseptic and observation of contraindications the author warns against extending the indication on of the uterosalpingography. He believes the procedure should be employed only in uncomplicated cases of sterility. In the event may aid in elucidating a number of physiological problems.

Diagnostic errors are frequent in the cases of women with a spastic diathesis and a labile sympathetic nervous system who react strongly to psychic and psychosexual stimuli and in the cases of women with displacement of the uterus and an abnormal course of the tubes. In such cases the roentgen picture often fails to show the outline of the tubes although insufflation yields a positive result.

For the diagnostic results of examinations both mechanical and chemical influences may be responsible. The latter may include the male sperm.

Op H L (C)

Fronticelli E Te ti v Syphilis of the Uterus
and Adnexa (Sbl d t) Cl i 6 7
d ll t o d gl) Cl i 9 7 58

Two cases of tertiary syphilis of the uterus and one case of tertiary syphilis of the adnexa are reported. The author states that syphilis of the uterus and adnexa more frequently than is generally believed. In syphilitic metastases the most important symptoms are hemorrhage which increases in severity and pain without involvement of the adnexa or perimetrium. Histological examination reveals the typical picture of periarteritis mesenteritis and infil-

tration of the parenchyma by round fusiform and typical plasma cells.

The author's first case was one of periarteritis and his second one of obliterating mesarteritis. If the disease is not treated the infiltrating connective tissue will undergo hyaline and fibrous degeneration and cause sclerosis of the uterus.

In all of the cases reported the Wassermann reaction was positive. The differential diagnosis of the condition is made possible by the Wassermann test and a decrease in the symptoms under specific treatment.

AUD EY G MORGAN MD

Gul T T sts of the Virulence of Streptococci
in the Treatment of Cancer of the Uterus (L
p o d ll ul d ll tr pt c effa r
d l c d ll te) R i l d g 9 7
388

Even when a faultless technique is used Wertheim's abdominal operation for cancer of the uterus is still associated with a high mortality. Some of the deaths are due to infection by streptococci. Ruge used a method of testing the virulence of the streptococci. He tries to reproduce in vitro the struggle between the bacteria and the defensive forces of the body. He takes streptococci directly from the focus of infection on the ulcerated crater of a carcinoma of the uterus after abortion etc.) and so sows them in defibrinated blood of the patient obtained by puncture of a vein. When the streptococci develop rapidly in the blood of the patient they are virulent and the prognosis is unfavorable but when they multiply slowly—only after four hours—not at all they are not virulent.

Philipp modified this method somewhat to overcome its subjective features. He inoculates on Petri dishes for each half of the mixture of defibrinated blood and bacteria and after it has been kept in the most favorable incubation temperature another dish with the other half. The results always develop in colonies in the first dish but the development in the second dish depends upon the virulence of the streptococci.

The author reports fourteen cases in which he tested the Ruge-Philipp method. Although the number is too small to permit definite conclusions he believes that in cases of carcinoma of the cervix which are clinically operable the prognosis after radical abdominal operation will be good if the Ruge-Philipp test is negative but if the streptococci are virulent the postoperative course will probably be complicated by infection even when the clinical condition seems to be favorable.

The presence of virulent streptococci does not necessarily mean clinical inoperability but of course in cases with deep diffusion of the cancer the streptococci

cocci will have a better opportunity to increase in virulence. The author believes that if the test were generally applied and all cases with virulent streptococci were excluded from operation or given preliminary treatment to eliminate the virulent bacteria or decrease their virulence the mortality from Wertheim's operation would be greatly reduced.

AUDREY G. MORGAN, M.D.

Pomeroy L. A. Five Year End Results of Radium Treatment in Carcinoma of the Cervix Uteri
Am J Roentgenol 1927 xviii 514

In the earlier cases of carcinoma of the uterine cervix reviewed by Pomeroy the treatment consisted in the intra uterine application of screened radium element and the insertion of steel needles containing radium element directly into the tissues of the cervix. The dosage was usually about 3,000 mgm hr. In the technique now used the entire length of the canal is irradiated with a dosage of about 2,700 mgm hr and in addition glass or gold seeds are implanted in the cervical mass. As a rule twelve 1 mc glass seeds are implanted. The combined dosage therefore ranges from 4,000 to 6,000 mgm and mc hr. Such treatment is not repeated for several months if at all.

Of twenty nine patients with microscopically proved carcinoma of the cervix who were treated with radium five (17 per cent) are apparently well after five years. The twenty nine cases included all classes from early to advanced. More than half of the cancers which were arrested by the treatment were adenocarcinomata.

In the discussion of this report HEALY stated that he uses two capsules, one in the cervix and one just above the internal os. He has rarely observed carcinoma of the cervix extending above the internal os. He applies applicators across the cervix and at the base of the broad ligament on either side, giving a fairly large dose. Since 1921 he has used the roentgen rays for external crossfiring. He also makes interstitial applications of gold seeds containing radon. The patients rarely receive less than 6,000 mc hr. The cervical canal receives 3,000 mc hr and the seeds increase the dosage from 500 to 2,500 mc hr. Many patients receive 7,500 mc hr within forty eight hours. Six weeks later routine high voltage roentgen ray treatment is given over the pelvis. Healy has found that the histological study of the cell type yields no information of value in the treatment of these cases. The most important factor governing the prognosis is the extent of the local disease. Of the patients with early carcinoma who were treated five years ago 60 per cent are living and well. Of those whose condition was in the borderline stage 56 per cent are well and of those whose condition was advanced 9 per cent are well. Of the patients who were treated for recurrence 16 per cent are now in good condition. All of these patients were treated with radium only.

WARD reviewed 32 cases 14 of which were operable. Fifty per cent of the patients are well

after 5 years. Of those who were treated for recurrence 14 are well. Of those with a borderline condition 10 per cent are well. Of the 141 with inoperable and advanced cancer 5 per cent are well. The technique of treatment consisted in the introduction of one or two tubes of radon in the cervical canal and the application of a plaque against the cervix to crossfire the growth. The uterine cavity was not irradiated. The dose was between 2,500 and 3,000 mgm hr. This was repeated at the end of six weeks if there was still evidence of the disease. Ward believes that in the determination of the dosage the clinical classification of the case is of more importance than the microscopical classification.

SCHMITZ stated that the histological classification is one of prognosis and not one of treatment.

In closing the discussion POMEROY stated that irradiation of the entire uterine canal lessens the chance of contraction of the cervix with retention of pus in the uterus. He makes only one biopsy.

He has found that a large cauliflower mass is much more amenable to treatment than a small destructive eroding lesion. A. JAMES I. ARKIN, M.D.

ADNEXAL AND PERIUTERINE CONDITIONS

Rubin I. C. Rhythmic Contractions and Peristaltic Movement in the Intact Human Fallopian Tube as Determined by Peruterine Gas Insufflation and the Kymograph *Am J Obst & Gynec* 1927 vi 557

Contractions in the human fallopian tube can be studied by means of uterotubal gas insufflation and the kymograph. In streaming through the tubes at a constant pressure rate flow, the gas acts as an elastic body upon which tubal contractions register varying degrees of pressure. As a comparison with the phenomenon in the surviving specimen without gas insufflation has shown the character of the contractions is but little affected by the gentle inflow of the gas. A rapid flow may cause a certain amount of irritation and is therefore to be avoided. Rhythmic waves recorded upon the kymograph and manometric fluctuations indicate objectively the presence of tubal contractions. These are absent when the tubes have been ablated or are closed or strictured at any point between the intramural portion and the fimbria. They are totally absent in the dead human uterus and tubes.

In the absence of tubal patency and tubal contractions the kymographic record describes an upward slanting line and when the highest pressure point is reached it describes a horizontal line which drops when the cannula is withdrawn from the uterus.

The evidence so far adduced indicates that certain conditions influence the character and occurrence of peristaltic movement. In the presence of spasm an initial high pressure is followed by a drop in pressure which is succeeded by the appearance of regular rhythmic contraction waves on the kymograph.

Narcosis definitely reduces the rate and amplitude. In the presence of cervical regurgitation and the absence of fluctuations bearing down efforts on the part of the patient will establish the diagnosis. If the pressure rises as a result of these straining efforts it indicates that the tubes are patent but their peristaltic motion is impaired. In doubtful cases this has proved a valuable aid.

Since tubal contractions depend upon ovarian activity their character changes with the different phase of the menstrual cycle. They are definitely affected by such conditions as grave functional amenorrhea in young women and the preclimacteric state. In these conditions the kymograph curves if present at all are shallow and less frequent. However in many cases of sterility associated with amenorrhea manometric fluctuation are noted during tubal inflation and sometimes are well marked resembling the behavior of normal tube.

Although no parallel investigation of the presence and content in the blood of a female sex hormone has been carried out in these cases the results obtained point to retention of tubal peristalsis without sufficient hormone present in the same case to activate the uterus to the full degree of menstruation.

E. L. C. NELL, M.D.

Case J. R. The Ovary in Osteomalacia. *Am. J. Obst. & G.*, 1931, 10: 77.

Osteomalacia has long been regarded as a disturbance of metabolism peculiar to female and usually occurring in pregnancy or at least brought to its fullest development by pregnancy. The lime salt is absorbed from the bones—first and most noticeably from those of the pelvis and later from other bones. The result is curvature and deformity of the pelvis and other bony structures. Fractures occur readily and at the same time genetically correlated inflammatory degenerative processes develop in the nerves and muscles. These latter are important factors in the clinical picture of osteomalacia.

That the same has decided on an hyperplasia plays a prominent part in the condition is indicated by the following observations:

The prompt cessation and permanent cure of many cases after castration.

The occurrence of aggravated osteomalacic state during pregnancy and menstruation.

The failure of other endocrine therapy.

The high degree of fertility in osteomalacia.

The occurrence in the ovary of structures which must be associated with specific ovarian functions.

The intense vascular changes in the ovary—congestion with the development of almost a telangiectatic condition.

The presence during pregnancy of almost maximal graafian follicle with a well marked corpus luteum.

The occurrence of interstitial gland formation in pregnancy at puberty and at other times when

ovarian hyperfunction is to be expected and the occurrence under normal conditions of pregnancy of certain bone changes slightly resembling those of osteomalacia.

All of these observations seem to indicate that osteomalacia is closely related to ovarian hyperactivity and that this excessive ovarian function becomes in some way diverted along pathological lines.

HARVEY B. MATTHEWS, M.D.

Dalla N. A Cyst of the Ovary Diagnosed as a Fibromyoma of the Uterus. (*Come u. st. d. l. a. po. nd. e. lla. d. g. o. dif. from. o. m. a. dell. te.) Cl. st. q. 7. 567.*)

The patient whose case is reported was a woman forty-three years of age who had been married for eighteen years but had had no children. Shortly before she was seen by Dalla her menstruation had become menorrhagic and since then she had leucorrhea before the menstrual period. She complained also of bladder symptoms and of a tumor in the abdomen which had slowly increased in size and caused a feeling of weight.

Examination revealed a large tumor in the median position in the subumbilical region. The coplasm was hard but not of uniform consistency, the upper part being softer than the lower part. Its surface was irregular. On vaginal examination the cervix was found to be continuous with the lower pole of the tumor and only slightly movable. The entire mass moved with the cervix. A diagnosis of fibromyoma of the uterus was made. The slight mobility of the tumor and the severe bladder symptom suggested that the neoplasm was interligamentous and the variation in its consistency and the discharge suggested that it was beginning to undergo degeneration.

At operation the tumor was found to be a cyst of the ovary with firm and diffuse adhesions to the intestine and the floor of the pelvis. The adhesions indicated that inflammation had been present but no history of inflammation could be obtained. Fixation of the cyst had been prevented by the thickness of its walls. The median position of the cyst and its apparent connection with the uterus were due to its adhesions, its partially interligamentous development and its incarceration in the pelvis. The typical signs of cyst of the ovary had been masked by the old inflammation. AUDREY G. M. ROY, M.D.

EXTERNAL GENITALIA

Puccioni L. Histological Changes in the Vagina in the Different Phases of the Functional Cycle of the Ovary. (*M. d. b. c. z. o. tol. g. ch. d. lla. g. d. l. d. l. p. t. o. le. f. d. l. g. f. n. n. l. d. l. a.) R. f. f. d. g. 19. 7. 1. 544.*)

Puccioni describes the histological appearance of the vaginal mucous membrane at different periods of the menstrual cycle. In ten instances the examination was made in the week preceding the beginning

of menstruation in three during menstruation in five from twelve to sixteen days after menstruation had stopped and in two after the beginning of the menopause

In the intermenstrual period there is a first stage in which the epithelium of the vaginal mucous membrane is beginning its regeneration at the points where complete desquamation took place. In the second stage regeneration is complete and the epithelium is made up of a basal layer of cylindrical cells surmounted by one or two rows of cubical cells and a number of rows of pavement cells the last of which is almost completely cornified.

The premenstrual period may also be divided into two stages. The first is characterized by active proliferation of cells chiefly those of the basal layer of epithelium which causes a uniform elevation of the epithelial surface. There are many interpapillary prolongations which extend deep into the tunica propria and many papillae with dilated capillaries which penetrate the epithelium. In the second stage the proliferation of epithelium stops and degeneration of the individual cells most marked in the superficial layers begins accompanied by desquamation of the horny layer. The connective tissue of the tunica propria is loose and infiltrated with young cells there is intense hyperæmia.

The menstrual period is characterized by progressive desquamation of the newly formed epithelium a decrease in the papillary invaginations and an intense hyperæmia accompanied by many small hæmorrhages in the tunica propria. The connective tissue remains loose and infiltrated.

In the menopause the vaginal mucous membrane looks very much like that of the resting intermenstrual period.

The changes described are synchronous with those in the uterine mucous membrane. The changes were of the same nature in all of the cases but much more intense in some than in others. The most constant ones both qualitatively and quantitatively are those of the premenstrual period and the least constant those of the menstrual period.

AUDREY G. MORGAN, M.D.

Furniss H. D. Ureterovaginal and Vesicovaginal Fistulæ Combined. *J. S. G.* 1927 III 495

While ureterovaginal and vesicovaginal fistulæ are fairly frequent the combination of the two is rare. The author records two cases in which such

fistulæ followed hysterectomy for fibroids and were cured by operation by a new technique.

There are three principal causes for this operative complication: (1) direct operative incision of the ureter and the bladder; (2) necrosis of the ureter and the bladder as a result of clamping or suturing; and (3) necrosis from interference with the blood supply.

The type of treatment of the condition depends upon the presence of infection of the ureter and kidney pelvis, the loss of function and the possibility of bringing the ureter into the bladder wall. When the ureter cannot be brought into the bladder wall nephrectomy is the operation of choice. If function is good and there is no infection a ureterovesical anastomosis should be performed and the vesicovaginal fistula closed later. The technique is as follows:

Exposure is made through a one-sided Pfannenstiel incision which starts at the anterior superior spine of the ilium and runs to its inner side and passes downward in a curved direction to the midline 1 in. above the symphysis. The fibers of the external oblique are divided in the same direction as are also those of the internal oblique. The transversalis is divided with a sharp knife. Care is taken not to open the peritoneum. The latter is peeled away from the lateral and posterior pelvic wall. The ureter found on the peritoneal reflection is grasped with Allis clamps so that the teeth come together around it. The fistulous portion of the ureter is exposed. When a suitable portion of the ureter is found for anastomosis it is double clamped and cut. A portion of the bladder wall nearest the ureter is grasped by two Allis clamps and a forceps is pushed through the walls so that it enters anteriorly and emerges posteriorly. The portion of the ureter held in the forceps is then transferred to the forceps that has passed through the bladder and the ureter is drawn into and again out of the bladder. The ureter is then stitched to the posterior bladder wall where it is drawn into the bladder. The forceps on the end of the ureter is then removed and the free end of the ureter is allowed to fall into the bladder cavity. The opening in the anterior bladder wall is then closed.

The wound is drained for seventy-two hours. A Pezzet retention catheter is placed in the bladder for seven or eight days being removed daily for cleansing.

Two cases which were successfully operated upon in this manner are reported. HARRY W. LINK, M.D.

OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

No dio A S me Case of Perforation of th Uterus
(C l) R l l d g o 333

No l r p ts cases of pe foration of the ute us n h h the l s n as produced by surgical i strume t such as abortion fo c ps uter ne s unls cur ties d lato etc Operation as neces sarv in all Total hvt e tomv a pe fo med in t o c se th death i both supravag nal hyster ectomy th ee ca es vith t vo de ths and one re co ery anl a con e ative operat on in one ase w th death

The autho divl es perforations of the uterus into two groups w th efe ence to treatment—those in ute i that are not pregnant or puerperal nd those in peg ant or puc peral ute i. In the first goup the t eatme t may co ist in () trictly co se vat ve measu e uch as r t the applicat on of ce the dmi tation f opium etc or () a conser ati e peration fo s tur of th pe foration or (3) a more r l ss ra lcal pe at n de ren l ng upon the site of the perf at on th n ture f the inst ument by hich t as made anl the amount of hamor h ge

I the ec nd g up the operati n should be total h t e t m The danger of fectio in these case i ve y g at In Nord o opni mple utu e of the p r f at n i permi sible only when the gy e col g th made the p r f ration h ms lf in the ho pit l j k no th t i t s done under condi ti of st ict a eps s the e ha been no pev ou att mpt t b r t o out ide the hospital and there is no ju v t n ghbor ng organ I art al hyster ec t m is nlc ted only n cases in vch total hvst ect mv i contra i dicated on account of the patie ts po g ne al co d t o r o ld be d f ficult bec use f obe t o co se v tion of the stump of the cer ad able on account of injury t neighb ng organs A G M G N M D

H owitz E A and Kuttner T T The Blood B l i ub in in Ectopi P egnancy 1m J Ob t & G 9 a 7

F om a t d y of fifteen crs s of ectopi pregnancy the utho co clude th t ectopi pregn ncy cannot be d ag sed by determ at on of the b l r ub n c n cent at n f the per pheral bl d The main points b ought o t in this art cle may be summarized as follo

In the hamorrhagic e tra asations of cert n cas of e top c t r gna cy there s prob bly a loc l format n f b l r ub n f om hem glob n

It ha n t been d te mi ed how qu ckly this b l r ub in is fo med or absorbed

3 The normal l ver promptly removes any e cess of b l r ub in from the circulating blood by excreti g it into the biliary passages

4 In cases of ruptured ectopic pregnancy icterus may be simulated because of the anemia

5 Hyperb l r ubi rem a i not infrequent in the absence of biliary hepat c and hemolytic d sease

6 The content of bilirubin in the blood is the same in ectopic pregnancy as in othe gynecological cond tions HAR EY B MATTHEWS M D

B e endempfel Ple ck E Repeated Extra Ute Ine I egnancy on tl Left Side (Wied h l t l k t g E t ter g id t et) Z t l b l f Gy k 9 7 l 5

The author reports a case in which fifteen mo ths after simple ligation and extirpation of the left fallopian tube fo ruptu ed ext a uterine pregnancy a econd laparotomy became necessary becaus of re cur ence of the typ cal sig s of extra uteri e pregn ncy At the second interventio the ad exa on the right s de ne e again found inta t b t on the p sterior wall of the uteru at the upper p le of the left o ary vch was adherent at th t po nt there v as a blu sh nodule the si e of a v alnut co ist i g i firm onne t v e t sue v d an intact ovum envel ped by a cho on c membrane Ths was either an o a ian o an abdominal p egnancy Apparently the stump of the left tube had gradu lly become sufficiently patent to llo the pas age of sper matozoa K o (G)

Has elblatt R Repeat d P gna cy in tl e Sam Tube Two New Cas es (U b w de h l t G d t t d l b T b Z e n F e l l) t t b l t g c S d 9 7

The author eports t o new cases of repeated tubal pr gnancy on the same s de In o e o ly th middle thid of th tube was emo ed at the fi t ope ation After another pregnancy vch was ter min ted by spontaneous del verv the p t e t was ope ated up n for tubal pr g ancy de eloping in the remant g late al p rtio of the resected tube At the second operatio the entire tube was remo ed

In the other c se the patient was operated upon f r tubal rupture An ncomplete salp gectomv was done s in the first cas a medial stump of the tube 3 cm long be ng left Two and a half years later ne tubal p e g ancy developed in the tubal stump and an ope tion wa pe fo med f r complete re moval of the tube

Such recurrences of tub l pregnancy on the same sid a e v ery ra e The auth r has been able to fi d only nineteen cases rep rted in the lite ature In two the c ndition was fou d at autopsy I se en teen operat on w s performed The recu rence of

tubal pregnancy three times occurred in only two cases

The possibility of the recurrence of pregnancy in the same tube is due to faulty operative technique and disturbances of healing. In the author's opinion it is essential always to perform a complete salpingectomy with wedge excision at the uterine cornu and to cover the wound carefully with peritoneum.

Hasselblatt reviews also twenty three cases which are reported in the literature as repeated tubal pregnancy but cannot be accepted as proved cases because the data are unsatisfactory or insufficient.

He believes that the diagnosis of repeated pregnancy in the same tube is justified only when both pregnancies have been proved by operation or the findings at operation in the later pregnancy or at autopsy definitely indicate that there has been a previous pregnancy in the tube.

Kunze H. The Pathology of the Umbilical Cord
(Zur Pathologie der Nabelschnur) *Zentralbl f Gyn* 1927 11 1832

In 828 births twisting of the cord around the fetus occurred in 156 (18.8 per cent). Intrapartum death of the fetus in 2 cases and asphyxia of various degrees in 19 cases were ascribable to this complication. The author reports 1 case in which a fetal part was surrounded by the cord 4 times and cases in which it was surrounded 5 times. Injury to the child occurred in only 1 of these cases and was slight. In the cases in which death of the fetus resulted the umbilical cord was poor in Wharton's jelly. It was less than 1 cm. in diameter.

The length of the umbilical cord was found to be 68 cm. when it was twisted around the fetus once, 79 cm. when it surrounded the fetus 2 and 3 times, 102 cm. when it surrounded the fetus 4 times and 96 and 104 cm. when it surrounded the fetus 5 times.

The author reports also 1 case (among the 828 births) of circumscribed torsion of the umbilical cord. After a fall on her side the patient noticed that the fetal movements became gradually weaker and finally ceased entirely. On her entrance to the clinic one month before the calculated time for delivery no fetal heart sounds could be heard. A dead macerated child was delivered spontaneously. The umbilical cord which was 69 cm. long showed four circumscribed areas of torsion. One—1.5 cm. from the umbilicus of the fetus—was 0.4 cm. in width. The others were respectively 0.5 and 0.7 cm. wide. The umbilical cord made forty-one spirals and was not adherent. Between its placental attachment and the site of torsion nearest that point the cord was from 1.5 to 4 cm. in diameter. The placenta was white and bloodless.

Autopsy on the fetus disclosed no cause for the death. Spirochaetes could not be found. At the points of torsion examination revealed absence of Wharton's jelly and marked compression of the vessels without complete occlusion. The portion between the placenta and the first area of torsion showed an edematous swelling of Wharton's

jelly and dilatation of the vessels. Blood was found only in the intervillous marginal portions of the placenta. Elsewhere the vessels were empty.

The white portions of the placenta proved to be compressed chorionic villi with bloodless capillaries.

The decision as to whether the torsion of the cord occurred before or after the death of the fetus may be difficult if there are no definite evidences of the time of onset. In the case reported the torsion occurred when the fetus was alive and caused its death. Examination revealed edema of the umbilical cord on the placental side of the torsion such as that described by Ahlfeld and dilatation of the placental veins in this segment such as that described by Kuestner.

CONRAD (G)

Corwin J. and Herrick W. W. The Toxæmias of Pregnancy in Relation to Chronic Cardiovascular and Renal Disease. *Am J Obst & Gynec* 1927 11 783

To determine the effects of the toxæmias of pregnancy on the kidney and the cardiovascular system the authors studied 91 cases at the Sloane Hospital for Women, New York.

The toxæmias were classified as follows:

1. Eclamptic or acute convulsive toxæmia

2. Nephritic toxæmia with prolonged and marked albuminuria or non protein nitrogen of 40.0 mgm. per cent or more.

3. Hypertensive cardiovascular toxæmia—hypertension without convulsions and without nitrogen retention or marked and prolonged albuminuria.

The cases were studied before during and after pregnancy over periods ranging from six weeks to six years. Tabulated observations showed that cardiac hypertrophy, thickening of the brachial and radial arteries and certain eye ground changes were present in a large proportion during the toxæmia and also during the follow up period. Such changes suggest that some disorder of the kidneys or cardiovascular system antedated the pregnancy. The authors believe that a large proportion of these women had an underlying disease which was brought to light or aggravated by the pregnancy. The majority of them were large overweight women with heavy muscles, thick skin, large features, hands of a broad square pattern, masculine crines and spaced incisor teeth.

Hypertension persisting for months or years was found in one third of the cases of eclampsia, one half of those of nephritic toxæmia and two fifths of those of hypertensive toxæmia. One half of the nephritic group showed marked albuminuria in the follow up period and one third of the eclamptics had some albuminuria. PHILIP H. ARNOT, M.D.

Benda R. The Present Status of Our Knowledge Regarding the Toxicoes of Pregnancy. (Der heutige Stand der Lehre von den Schwangerschaftstoxikosen) *Med Klin* 1927 22:1 710

During pregnancy as well as during general bacterial infections the organism has defensive substances

at its disposal. Menstruation is brought about by a toxin in a menotoxin. The processes of menstruation are a miniature picture of early pregnancy. Many of the signs in the first weeks of pregnancy are to be attributed to the corpus luteum. The latter has great vitality. The internal secretory functions of the corpus luteum gradually pass over to the placenta the functions of which are of fundamental importance. The toxicoses of pregnancy are not anaphylactic phenomena, neither are they caused by the fetus. The occurrence during pregnancy under the influence of the growing ovum a humoral cellular change in the organism as a whole (disturbance of metabolism and of the glands of internal secretion). As the result of the cell destruction which increases during pregnancy because of the increase in cell degeneration and regeneration, the effect appears in the blood stream protein bodies which are foreign to both the blood and the body, thereby exerting a toxic action. The degree of their toxicity depends upon the degree of their dispersion. Their points of attack are chiefly the smooth musculature and the sympathetic nervous system.

The author expects important results from the physicochemical approach to the problem of the various phenomena of pregnancy. Euclott's diuresis is tonia is the miaisonic (oncotic pressure) all present factors which may be important in the interpretation of clinical disturbances. The kidneys connect tissue and sympathetic nervous system which are responsible for the constancy of the factors show during pregnancy a change in their function. This is manifested by a disturbance of the exchange values of the blood. By further research in this field it may be possible to find an explanation for the various phenomena which occur during pregnancy.

The potentially toxic nature of pregnancy is supported by the findings of Goffe and Meerson. Benda believes that during the course of pregnancy is a function of the cell. He has found that during gestation the permeability of the capillaries is increased for ions as well as for colloids (injury to the endothelium—capillaropathy gradarum). The failure of the barrier occurs only in the second half of pregnancy and not earlier, then in the first half of pregnancy it occurs regularly and in the second half almost regularly. A special glycolacturic albumin and thrombin of the capillaries in eclampsia may be explained by such injuries.

The reticulo-endothelial system is a still more active detoxicating system because of its ability to store up substances. The author was able to demonstrate disturbances due to it in the second half of pregnancy. They are always most severe in the toxicoses. From this fact he concludes that the reticulo-endothelial cells are also able to absorb toxins. In this process the cells are destroyed but they are easily regenerated. If regeneration does not occur the clinical picture of toxication of eclampsia. In this sense the toxicoses of pregnancy are the

manifestation of the failure of the cellular detoxication system. As the liver is the site of a considerable portion of this system, the author's investigations seem to support the conclusion that the liver also may be damaged as regards its function even in the processes of normal gestation.

In conclusion Benda states that the toxicoses of pregnancy are probably due to a variety of interdependent causes. There is little probability that the toxin of pregnancy will ever be found.

M T KA (G)

Ruck M P The Treatment of Eclampsia with Magnesium Sulphate 1 g M M th 97
1 558

The chances of recovery of the eclamptic mother vary inversely with the number of convulsions. Therefore the obstetrician's first concern should be to stop the convulsions as quickly as possible.

Following the suggestion of Lazaard thirty-six cases of eclampsia were treated with intravenous injections of magnesium sulphate. Twenty-six of the patients received only one injection but two injections were given in six cases and three injections in two cases. The usual dose was 2 ccm of a 10 per cent solution. In this group of cases there were no maternal deaths. Other methods of treatment which were usually tried first were high caloric irrigations, the administration of bromides, chloral morphine and digitalis, the intravenous injection of glucose, gastric lavage and phlebotomy.

In ten cases of eclampsia not treated with magnesium sulphate there were two maternal deaths.

In the fifty cases in which the outcome as regards the infant was known the fetal mortality was 53 per cent. In the group treated with magnesium sulphate it was 45 per cent. Four of the five deaths of newborn infants occurred in the group of cases in which morphine and other sedatives were used instead of magnesium sulphate.

From these results the author concludes that magnesium sulphate given intravenously is intramurally aids in the control of convulsions, shortens the course and decreases the maternal and fetal mortality. No untoward symptoms have followed its use. Do LD G TOLLE MD

Boulanger Th Indication for the Interruption of Pregnancy (L D T n d l t rupt d l g) G y te i b t 97

Brouha discusses the factors which sometimes justify the interruption of pregnancy—pelvic disproportion and necessarily illegal. With regard to pelvic disproportion, he says that following the days of effortful delivery, premature delivery was practiced for many years despite Pinaud's attack upon it. Recently, however, the literature has been rather silent on premature delivery. In order to ascertain the present day viewpoint regarding it, Brouha set a questionnaire to a number of the leading obstetricians of the world. This report is based on their replies.

Premature delivery carries with it a certain fetal mortality which ranges according to various statistics from 25 (Fabre) to 5 per cent (Gammeltoft). The maternal mortality (the morbidity could not be ascertained) ranges from 0.7 to 1.16 per cent.

Cæsarean section on the other hand carries with it an infant mortality approaching zero, the death of the child being rare. The maternal mortality is difficult to evaluate since it depends to some extent upon the occurrence of contamination and sepsis previous to the operation. In the author's opinion the mortality in uncontaminated cases ranges from 1 to 2 per cent, approaching that of premature delivery. Odagesco has estimated that of women who previous to a trial of labor are thought to present a disproportion between the fetus and pelvis which will necessitate a cæsarean section, 70 per cent will be able to deliver themselves spontaneously. We are therefore justified in assuming that the mortality of section is no higher than that of premature delivery.

In contaminated cases the mortality of cæsarean section is high (10 per cent) but the growing preference for low section and the improvement in obstetrics (hospitalization, pelvimetry and careful study of cases) should diminish the incidence of infection. The chances of rupture of the uterus along the line of the scar are ten times less following low section than following the classical section.

For cases of pelvic disproportion the author recommends a trial of labor first and if this fails a low cæsarean section. In cases in which premature delivery has been practiced in former deliveries and the woman refuses to submit to section, he consents to premature delivery.

When dystocia is due to an excessively large baby premature delivery appears to be justified when the patient is a multipara who has persistently borne large babies. In the cases of primiparae in which it is difficult to judge the size of the child, Brouha favors a trial of labor followed by cæsarean section if necessary.

MICHAEL L. MASON, M.D.

Sprecher: The Induction of Abortion in Syphilis
(La procazione dell'aborto nella sifilitica?) *Clin Obstet* 197, XXI, 453

The author states that there is probably no syphilologist who has not been importuned at one time or another to induce abortion in the case of a pregnant syphilitic woman. This request is made because of the belief that the child will be an idiot or bear other stigmata of congenital lues, that the disease in the mother will be made worse by the gestation and that during pregnancy the disease is not amenable to treatment.

Sprecher states that the induction of abortion in such cases is not warranted. Syphilis tends in itself to cause abortion and if it does not do so the infection is probably a light one and if proper treatment is given the child may be born without any syphilitic manifestations. Moreover, an induced abortion may have more serious effects on the woman than continuation of the pregnancy to term. With mod-

ern methods lues can be treated during pregnancy as well as at any other time.

MICHAEL L. MASON, M.D.

LABOR AND ITS COMPLICATIONS

Davis, C. H.: The Evaluation of Methods in Obstetrical Analgesia and Anæsthesia with Special Reference to Gas Oxygen. *Am J Obst & Gynec* 197, XVI, 806

Severe pain is not essential to childbirth. The obstetrician should give his patient the maximum relief obtainable without sacrificing her safety or that of the infant.

When the pains are distressing the author administers $\frac{1}{12}$ gr of heroin or $\frac{1}{4}$ gr of pantopon and $\frac{1}{100}$ gr of hyoscin. Half of this dose is given in the early stages of labor with moderate pain and short contractions and the rest is administered as it is needed. A severe labor occasionally requires an inhalation anæsthetic or the colonic instillation of ether oil quinine. When the labor is prolonged on account of a rigid cervix or an abnormal position of the fetal head additional hypodermics are often necessary— $\frac{1}{24}$ gr of heroin and $\frac{1}{200}$ gr of hyoscin. Hypodermics should be avoided during the last two hours of labor as the combination of an opiate with hyoscin may interfere with the respiratory efforts of the child at birth.

Inhalation anæsthetics may be administered intermittently for long periods of time. In several instances the author has administered nitrous oxide oxygen intermittently over a period of fifteen hours.

Late in the first stage or early in the second stage of labor intermittent analgesia is begun with nitrous oxide oxygen or ethylene oxygen. Ethylene is more inclined to slow up labor but has been used by Davis almost exclusively for two years.

Nitrous oxide oxygen may be used for all operative deliveries except version and cæsarean section. The relaxation necessary for version can be obtained with ether or ethylene oxygen. For cæsarean section nitrous oxide must be supplemented with ether or local anæsthesia or ethylene can be used alone.

An advantage of ethylene over nitrous oxide is that the former induces anæsthesia when administered in a mixture containing a higher percentage of oxygen.

When pulmonary, renal or cardiac complications prevent inhalation anæsthesia satisfactory results may be obtained by caudal anæsthesia or sacral nerve block.

PHILIP H. ARNOT, M.D.

Zarate, H.: Partial Symphysiotomy As Compared with Cæsarean Section in Contracted Pelvis. Twenty Cases of Partial Symphysiotomy (Symphysiotomie partielle contre césarienne segmentaire en cas de bassin limite). 20 cas de symphysiotomie partielle. *Bull Soc d'obst et de gynéc de Par* 1927, XVI, 436

Zarate states that partial symphysiotomy is absolutely harmless to the mother and associated with

only a low fetal mortality. It therefore regards it as preferable to cesarean section in all cases of contracted pelvis with a conjugate of more than 8 cm. He reported twenty cases in which only one fetus died. The one fetal death he ascribes to the fact that the operation was performed by one of his internes who extended the indications a little further than seemed advisable to Zarate. As nine of the women were primiparous, the use of forceps was necessary in over 50 per cent of the cases. In the cases of primiparae the operation should be done only when the cervix dilated and there was no dystocia from contractions. In the cases of the eleven multiparae forceps delivery was resorted to only once by a complete dilatation of the cervix.

In 50 per cent of the cases the fetus had begun to suffer from the fact that the uterus policy of expectant treatment had been carried to the limit. In three of the twenty cases reviewed the puerperium was subfebrile in one case purpural endometritis developed in one case there was a slight phlebitis of the leg lasting for only a few days. All of the patients entered the hospital as emergency cases most of them with fever and very suspicious findings on palpation. The child which died was that of a primipara who had been brought to the hospital following premature rupture of the membranes. In this case the cervix dilated to 13 cm. the child had begun to suffocate. The use of the forceps reduced during delivery.

ALFRED G. MANN, M.D.

PUERPERIUM AND ITS COMPLICATIONS

Frühling, A. E. Report on the Uterus After Delivery (Differential Diagnosis of the Pelvic Pain in the Puerperium). *Bull. S. d. b. i. t. d. g. v. d. P.* 1917, 5.

The author reports 77 early puerperal retroversion of the uterus in 53 women. In 100 consecutive deliveries he found a temporary or permanent retrodeviation in 30 (abortion or per cent). In 24 the condition appeared finally to be acquired while in 5 it was self-limited. In 5 cases of retroversion in the 200 cases the cervix was not a single in time of retroversion. In the deliveries by forceps retrodeviation occurred only twice.

Retrodeviation generally occurs after the first delivery. While the author has seen cases in which it occurred for the first time in a multipara it is generally temporary and easily reduced in such cases. He has seen all multiparae who had a retroversion after the first delivery and were free from it after subsequent deliveries.

The cervix usually reverts to its normal position sooner or later after delivery but in 5 cases Frühling was able to correct the retroversion and in 3 of these the condition persisted through later pregnancies. During the puerperium the uterus can be easily molded.

The author has found that retroversion is favored when the patient is allowed to get up early after delivery. In 3 of 4 cases it occurred before the

sixteenth and twenty-eighth days the period at which most women are allowed to get up. In 11 cases it occurred more than a week after the patient was up but in these instances was due to some unusual strain or accident.

The part played by dorsal decubitus in retrodeviation has been exaggerated. When retrodeviation occurs while the patient is in bed it is due to pressure from the full bladder rather than to the dorsal position. In women who are obliged to stay in bed for from 6 weeks to 3 months after delivery retroflexion occurred in only 1 and this case was one of the 5 in which the author was able to cure the retrodeviation.

The best treatment is manual replacement and massage. The massage should be repeated every day or every other day and the patient kept in bed a little longer than usual. Most retrodeviated uteri so treated remain in place after from thirty to thirty-five days but some may require two months of treatment. The author has had only a few failures. He emphasizes that the method described is slow and requires great patience.

Bruegelmann, C. Observation on Puerperal Sepsis. Particulars of the Localization and Frequency of Metastases. *B. b. h. t. g. b. S. p. H. r. p. l. b. d. b. Lok. i. st. u. d. H. u. f. k. t. b. M. t. t. n. M. i. f. G. b. i. f. G. k. 971. 44.*

Sepsis is caused not by multiplication of the bacteria in the blood but by the constant or intermittent entrance to the blood stream of bacteria from foci of infection. The author reviews 300 cases of puerperal sepsis in 5 of which the condition followed abortion and in 49 of which it followed delivery. Cases of uncomplicated septic abortion (endometritis septica) are excluded. The total mortality was 75 per cent. In 187 cases of endophlebitis and thrombophlebitis the mortality was 71 per cent in 33 cases of lymphangitis 48 per cent in 36 cases of endocarditis 100 per cent and in 44 cases with septicemia or unsuppurative septic foci betwixt 85 and 100 per cent.

In 8 per cent of the cases the infection was due to a single type of organism usually a hemolytic anaerobic streptococcus. In 19 per cent the infection was a mixed infection. In 6 per cent of these the anaerobic streptococcus predominated and other bacteria were present in considerably fewer numbers. In thrombophlebitis the anaerobic streptococcus predominated in lymphangitis the hemolytic streptococcus and in endocarditis the anaerobic taphylococcus.

In 75 per cent of the cases metastatic foci were found. In 56 per cent the foci were found in the lungs and in 26 per cent in the kidneys. In a small number of cases they developed in the spleen, liver, bone joints, muscles, skin, myocardium, meninges, brain, eyes, ears, parotid gland, thyroid, etc. In case with metastases the aerobic staphylococci predominated.

P. S. G.

Weinzler E Total Gangrene of the Uterus During the Puerperium (Totale Gangraen des Uterus im Wochenbett) *Arch f Gynaek* 1927 cxxx 5 1

Weinzler describes a very rare clinical condition which usually develops after a prolonged labor terminated by a severe operative procedure. An interval in which the patient's condition appears to be favorable is followed by a high intermittent fever lasting for weeks, acceleration of the pulse, a copious dark brown foul smelling discharge and oedema of the vulva and perineum. The uterus is found high in the abdomen and very sensitive to pressure and the general condition becomes very poor. After from fourteen to twenty days possibly even later a foul smelling necrotic piece of the uterus of variable size separates spontaneously. The temperature may then fall and a quick recovery result. The local healing takes place with atrophy and atresia of the uterus and sometimes also of the vagina. Death occurs in about 30 per cent of the cases from septicaemia or perforation peritonitis.

A case seen by the author was that of a twenty two year old primipara with premature rupture of the membranes, a generally narrow pelvis, a purulent discharge, pointed condylomata, weak labor pains, a temperature of 38.5 degrees C. and a large child in occipital presentation. An incision was made in the cervix and delivery effected with the forceps. The child was dead from hemorrhage of the brain. During the puerperium there were evidences of an infection of the internal genitalia and the pelvic peritonium and on the seventeenth day signs of general peritonitis developed. Laparotomy revealed total gangrene of the uterus which lay entirely free in its serosal covering. The patient died three days later.

GUNSSLE (G)

MISCELLANEOUS

Kosmak G W The Result of Supervised Midwife Practice in Certain European Countries Can We Draw a Lesson from This for the United States? *J Am M Ass* 1927 lxxxv 209

In a survey of the midwife system in obstetrical practice in certain European countries Kosmak was impressed by the high standards required of mid-

wives. In Sweden and Norway the education and supervision of midwives has been in vogue for more than 200 years and has always been actively sponsored by leaders of the European medical profession. The results of this midwife training are excellent: the maternal mortality and morbidity in these countries being low. In the period from 1900 to 1918 the average puerperal death rate in Norway was 2.95 per 1,000 births and 85 per cent of the deliveries were done by midwives.

In the United States the maternal mortality rates are very high as compared with those of European countries. The greatest number of deaths are due to puerperal septicemia and operative deliveries. In United States hospitals operative procedures are used in from 10 to 30 per cent of obstetrical cases, whereas in the Scandinavian countries they are used in an average of 4 per cent.

Kosmak suggests that the Obstetrical Section of the American Medical Association through its membership in the Joint Committee on Maternal Welfare inaugurate and participate in a careful inquiry as to the cause of the high mortality rate. He suggests also the development of community interest in better obstetrical care, improvement in the teaching of obstetrics to students, especially the clinical side, and readily available postgraduate instruction of physicians. Such measures he believes will result in a desire for better care of pregnant women on the part of the laity and a corresponding increase in the dignity of the obstetrical attendant. He states that it is for members of the medical profession to decide whether a midwife system shall be a part of the obstetrical scheme in the United States. Many states are ignorant of the number as well as the qualifications of midwives working within their boundaries. When this negligence is compared with the carefully supervised system in Scandinavian countries the necessity for reform becomes at once evident.

If midwife attendance is objectionable, the medical profession must find a substitute for it or continue to have unjustified mortality rates in childbearing which are not in accord with the achievements in other fields of American medical practice.

ABRAHAM A BRAUER M D

GENITO-URINARY SURGERY

ADRENAL KIDNEY AND URETER

Lee Brown R K and La dley J W S *Pyel enous Backflow* J 4 W 1 97 l vi 94

This article is an attempt to relate the work on pyelovenous backflow that has been done up to the present time. A short summary of the literature is presented together with some original observations made by the authors.

The first part of the article gives a brief position of the evidence produced by different investigators either in favor of or against the occurrence of pyelovenous backflow and contains tables showing the authors' findings in twenty-five specimens.

In the second part of the article the authors attempt to explain the mechanism by which the phenomenon is produced assuming that its occurrence has been proved beyond reasonable doubt.

Joi G CHEETHAM MD

Belcler G W *Renal Distortion Its Relation to Nephralgia* J 1 W 1 97 lx 66

While distortion of the kidney usually does not cause pain in some cases nephralgia results from the encroachment of neighboring viscera or from postoperative cicatrization and arteriosclerosis.

When the possibility which the patient complains can be produced by distortion of the pelvis of the kidney on the same side and the pyelogram shows distortion of that kidney whereas the pyelogram of the other kidney is normal the cause of the pain is probably intrarenal. However if there has been previous nephrotomy or nephropexy this fact must be considered in the interpretation of the pyelograms.

If other diseases or disturbing conditions are associated with renal distortion they should be treated before surgical operation. Undertake for the relief of the pain. The patient should be kept under observation for a considerable period and all other measures such as the use of abdominal supports should be tried first.

If an operation is performed decapsulation and section of the nerve of the renal pedicle should be done if the function of the kidney is so far from normal. If there is marked atrophy and the symptoms are severe nephrectomy with removal of the capsule is indicated. C. TRUSS S. J. A. M. D.

Gottlieb J G *Crossed Renal Dystopia (Dystopia)* J 4 W 1 97 l vi 97

Crossed renal dystopia is a congenital anomaly in which both kidneys are on one side but the ureter opens into the bladder at the normal sites. One of the ureters runs across the spinal column to the opposite side. In a left crossed renal dystopia the

left kidney is displaced to the right side. As the two kidneys are close together on the same side during embryonic life they may become more or less fused. The condition is therefore sometimes called a unilateral fused kidney.

One hundred and six cases of crossed renal dystopia have been reported in the literature. To these the author adds a case seen by Krejselburg and a case of his own. In thirty-one cases the condition caused symptoms but in only fourteen was the diagnosis made before operation. These fourteen cases which include the author's case are reported in detail.

Before laparotomy became general the diagnosis was always made at autopsy. In fourteen cases operated upon before the introduction of the roentgen ray the cause of the deaths. Of the fourteen cases diagnosed correctly before operation by means of the roentgen ray nine were operated upon without a death. In all but two of these the condition caused symptoms.

The secondary changes are generally due to defective drainage of urine which lead to hydronephrosis, pyonephrosis or the formation of calculi. The diagnosis can be made by roentgen examination following the introduction of opaque sounds into the ureters. To determine secondary changes in the kidney pyelography and pyeloscopy are necessary. If the dystopia is not causing symptoms it does not require treatment. If it does use symptoms the indications are the same as those in simple dystopia. The lesion fusion there is between the two kidneys the simpler the operative technique.

W. DREYER M. D.

Antonucci C and Cast A *Case of Renal Ureters* J 4 W 1 97 l vi 97

Six cases of anomalies of the kidneys and ureters are reported. The first case was that of an eighteen-year-old girl with symptoms of cystitis. Roentgen examination showed partial duplication of the ureter with two openings into a single kidney.

The second case was that of a man twenty-eight years of age who had suffered since childhood from dysuria. Roentgen examination showed two pelvises at a considerable distance from each other, the upper one apparently in a much worse condition than the lower one. The ureters were too narrow and dilated. As the left kidney was apparently nonfunctional all operation could not be performed but lavage of the right pelvis was followed by improvement. The organ was not a solitary kidney but a supernumerary kidney as the two parenchymas functioned independently of each other.

The third case was one of single tuberculous kidney with double pelves and ureters in a woman twenty-two years of age.

The fourth case was that of a young woman with cystitis complicating pregnancy. Roentgen examination showed a supernumerary left ureter.

In the fifth and sixth cases there was a double left ureter.

In conclusion the authors state that the inflammation pyonephrosis and pyonephrosis which are apt to result from such anomalies may be prevented by proper treatment. AUDREY G. MORGAN M.D.

Corbus B. C. Pylonephritis and Its Relation to Non Gonorrhoeal Urethritis. *J. Im. M. Iss.* 1927 LXXXV 2162.

Eisendrath D. N. The Inlying Ureteral Catheter in the Treatment of Pylonephritis and Other Renal Conditions. *J. Im. M. Iss.* 1927 LXXXV 2170.

CORBUS states that non gonorrhoeal urethritis of bacterial origin is often the result of infection carried from within outward rather than from without inward and that pylonephritis due to focal infection with poor kidney drainage is often the cause of persistent non gonorrhoeal urethritis. The treatment should include the removal of focal infection and the establishment of adequate kidney drainage.

EISENDRATH advocates the use of an inlying ureteral catheter for a period of days or weeks in the treatment of acute and chronic pylonephritis anuria of the obstructive type, severe colicky pain due to renal or ureteral calculi or kinking of the ureter in dropped kidney for side tracking of the urine following operation for vesicovaginal fistula and for the splinting of ureteral injuries incident to hysterectomy. A small catheter is best as it permits drainage alongside as well as through its lumen. Lavage of the renal pelvis can be done as a daily supplementary measure but is of little additional advantage. If there is a tendency for the catheter to be expelled when the bladder becomes filled and is evacuated spontaneously the use of a urethral inlying or retention catheter will provide constant drainage of the urine accumulating in the bladder.

Persistence of the fever of pyelonephritis in spite of an inlying catheter suggests extension of the infection to the perirenal tissue or such a severe degree of parenchymal involvement as to make operative intervention advisable. C. TRAVERS STEPHEN M.D.

Hibleur M. The Indigocarmine Test as a Method of Diagnosing Renal Tuberculosis (L'épreuve de l'indigo carmin comme moyen de diagnostic de la tuberculose rénale). *J. d'ur. méd. et chir.* 1927 VII 252.

Under normal conditions indigocarmine injected intramuscularly appears in the urine in from six to ten minutes. If the function of the kidneys is impaired its elimination is delayed and the coloring of the urine is less intense. In the usual procedure an injection of 4 c.c. of a 4 per cent solution of the

dye is made in the upper external surface of the buttock. A normal indigocarmine test does not necessarily prove that the kidney is intact anatomically but shows that it is functioning sufficiently well to keep excretion at the normal level.

Wildbolz divides renal tuberculosis into the following three stages: (1) beginning tuberculosis (2) the stage in which there is considerable caseation of the kidney tissue and (3) the stage in which the parenchyma is almost entirely destroyed. The author reports a case in each stage giving the results of the indigocarmine test. He never found normal elimination of indigocarmine by a kidney that was incapable of performing its normal function and has never found poor elimination by an intact kidney. Even beginning tuberculosis always causes some delay in the elimination of the dye.

The test is particularly important in early cases. In these the elimination of the dye is generally retarded for from two to five minutes. As a rule there is a certain parallelism between the severity of the lesion and the retardation but in some of the early cases studied by the author the elimination was greatly retarded. The reverse phenomenon of little retardation in advanced cases has never been seen. It appears that in early cases with great retardation the bacilli are particularly toxic but the author has never noted marked signs of nephritis in such cases.

The indigocarmine test can be used also in kidney diseases other than tuberculosis. It is quick and simple and sometimes renders more painful examinations unnecessary. AUDREY G. MORGAN M.D.

Seres e Ibarz M. A Review of Eighty Five Nephrectomies for Renal Tuberculosis (Enseñanza de mis 85 nefrectomías por tuberculo renal). *Clin. y lab.* 1927 XIII 353.

The author emphasizes the importance of an early diagnosis of renal tuberculosis and discusses the data that should be obtained before nephrectomy is advised.

He states that any tuberculous focus in a kidney tends toward propagation until all of the renal substance is destroyed. The symptoms referable to cystitis associated with the renal tuberculosis often subside. The silent periods may be of considerable length but the vesical pain usually recurs. Blocking of the ureter with destruction of renal substance often suggests a clinical recovery. Occlusion may result from the lodgment of a calcareous mass complete caseation or the formation and contraction of fibrous tissue. The most complete exclusion results from fibrous tissue formation.

Periods of clinical improvement in renal tuberculosis usually mean a pseudocure from total exclusion of the kidney, true autonephrectomy or the exclusion of a tuberculous lesion within the kidney.

The earliest symptoms of renal tuberculosis are increased frequency of micturition especially at night, pain and tenesmus at the end of micturition, pain radiating down the penis to the urinary meatus and pyuria.

These symptoms especially when associated with a history of tuberculosis elsewhere in the body are sufficient to suggest renal tuberculosis. Palpation often reveals tenderness in the region of the kidneys. Albuminuria is almost always present and the urine is usually highly acid.

On cystoscopic examination the bladder may show tuberculous granulations, tuberculous ulcers or zones of increased vascularization. The same lesions may be seen at the ureteral orifice. The ureters should be catheterized and separate specimens of urine should be collected. A differential renal function test should then be made when possible. When this cannot be done because of the patient's intolerance to cystoscopic manipulative procedures the condition of renal function must be determined from Ambard's constant. WILKINSON, M. E. MD.

Gottlieb J. The Early Diagnosis of Renal Tumors (S. I. d. g. o. t. c. p. r. e. d. e. s. t. m. s. (le) J. d. l. m. e. d. i. c. 97. 97. 4.

Since the introduction of the roentgen examination great progress has been made in early diagnosis of renal tumors. The author employs pneumokidney in combination with pyelography and uses pyeloscopy and nephroscopy as auxiliary methods. He has been unable to find any mention of pyeloscopy and nephroscopy in the literature but with their aid he has correctly diagnosed all cases he has seen in the recent years. He reports eight cases treated in the last three years.

He states that if the tumor begins in the parenchyma and is still small, no change in either the form of the pelvis or the outline of the kidney may be visible in examinations with pneumokidney. If the tumor grows toward the periphery, there may be no change in the pelvis but pneumokidney will reveal a wavy and an asymmetrical renal outline showing that one or more nodules of the nongrowing half have reached the surface. The picture may be even clearer enough to reveal the exact site of the tumor. If the neoplasm grows toward the pelvis, it may displace the pelvis as a whole or only some of the calyces compressing them so as to give them curious shapes. If it has invaded the pelvis, the pyelogram will show partial or complete lack of filling of one or more of the calyces or of the entire pelvis. If the tumor has grown in a different direction, both the outline of the kidney and the picture of the pelvis will be changed so that a combination of pneumokidney with pyelography gives a very clear picture of the anatomical relationships. If the tumor is large enough to be palpable, pneumokidney generally, not necessarily as the pyelogram will show whether it is a renal tumor.

By means of nephroscopy and pyeloscopy the dynamics of the kidney can be studied—the mobility of the organ when the patient changes from a lying to a sitting position, when he breathes and when the tumor is palpated. This method in combination with the layer of oxygen around the kidney shows the relations between the kidney and the neighboring

tissues and organs which are of importance in determining the indications for operation.

In some of the author's eight cases of renal tumor the evidence was neither a palpable enlargement nor hæmaturia. AUDREY G. MORGAN, MD.

Doan E. Further Contributions on Villous Tumors of the Renal Pelvis and the Ureter (W. t. r. e. b. e. r. g. k. e. n. t. d. e. Z. t. g. h. l. t. e. d. N. n. b. k. s. d. U. r. i. Z. i. f. f. o. l. 97. 8.

Of sixty-eight renal tumors operated upon in the clinic of Illinois, six had their origin in the pelvis of the kidney or the ureter. Five were villous tumors. The etiology of these neoplasms is not yet clear. Calculi and villous polyps are so rarely associated that there is probably no relationship between them. Multiplicity of the tumor, which is found in about half of the cases, is variously explained. The question as to whether the neoplasms are of multiple origin or are implantations for the present unsettled.

In spite of the progress made in the past few years the clinical recognition of the tumors is still difficult. With the exception of cases in which cystoscopic examination reveals a papilloma hanging in the bladder from the lumen of the ureter or illa are found in the urine, a positive diagnosis before operation is rare. Occasionally, however, the presence of such tumors can be demonstrated as in one of the author's cases by pyelography. In an operative exposure of the kidney is not always sufficient.

The author agrees with those who regard these tumors as malignant. The histological picture is of only relative significance in this respect since even though it appears benign the papilloma constitutes a precancerous condition. Therefore, conservative theapeutic methods cannot be considered. Theoretically, nephroureterectomy is indicated in all cases but this operation is performed rarely seldom because (1) the exact diagnosis is not always made before the operation and (2) the operation appears to be too formidable for a sanguine patient. Both of these objections would be overcome by a two-stage procedure but this is often refused to permit a second intervention on the ureter. Frequently does not admit because of the hope that a recurrence will not develop.

The best method of performing total nephroureterectomy, that of Marion, is the one the operation is begun with high section of the renal pelvis of the ureter, freed from below upward, as high as possible and the operation terminated in the lumbar region. G. W. (2).

BLADDER URETHRA AND PENIS

Marion and Claxton. Another Case of Congenital Hypospadias of the Neck of the Bladder (Unpublished hyp. ur. ph. g. t. l. d. c. l. e. i. a. l. J. d. l. m. e. d. i. c. 97. 97. 0.

The condition under discussion was described before a recent meeting of the French Urological

Society The new case reported by the authors was that of a man fifty five years of age who stated that for about twenty five years he had been able to urinate only slowly The number of micturitions during the day was normal As a rule urination was not necessary at night but in July 1912 as the result of a cold the patient was obliged to urinate one night fifteen or sixteen times Thereafter he noted nothing abnormal for three years except that he sometimes found it necessary to make an effort to urinate

In 1915 he developed hæmorrhoids and was then obliged to urinate during the night several times Examination revealed congestion of the anus and prostate Subsequently there seemed to be a relation between the condition of the hæmorrhoids and the difficulty in urination

At first an effort was necessary at the beginning of urination but in the period from 1920 to 1924 the condition grew worse and the effort on micturition was so great that some faces were generally passed at the same time In February 1927 the patient had an attack of intense pain which he thought was kidney colic Chevassu gave treatment for bladder spasm Roentgen examination did not show any calculus and cystography failed to reveal a ureteral reflux or diverticulum

Cystography was followed by an attack of intense spasm of the sphincter The only nervous symptom was exaggeration of the patellar reflex Marion interpreted the symptoms as those of congenital hypertrophy of the neck of the bladder Chevassu then made another thorough examination to see if some cause for the spasm could be found in the urethra but nothing was discovered Following extirpation of the hypertrophied neck of the bladder the patient was able to urinate normally within twenty five days

AUDREY G MORGAN M D

Craig G and Brown R K L The Surgery of Epithelial Bladder Tumors *Med J Australia* 1927 Supp 11 p 337

The authors discuss epithelial tumors of the bladder from the standpoint of the results of early treatment the relative degrees of malignancy of the neoplasms and the results of treatment by surgery diathermy and X ray and radium irradiation

Up to the beginning of the present century the results of the surgical treatment of epithelial tumors of the bladder were poor Relief could be given only by the administration of opiates Gradually the prognosis became improved by the use of the cystoscope and fulguration Beer of New York was the first to treat these tumors under visual control by means of heat generated by the high frequency current and conveyed to the neoplasm by an insulated flexible wire passed through the operating cystoscope

The cause of these neoplasms is not known but their incidence is high among workers in the aniline dye factories of Germany and four times as high in men as in women They occur most frequently between the ages of twenty and sixty years

The diagnosis rests largely on the cystoscopic findings A very constant sign is hæmaturia

A successful result from treatment depends largely on repeated follow up examinations and re treatment of such small recurrences as may be found until complete eradication of the disease has been attained When the tumor is small and of the papillomatous type the treatment may be carried out through the operating cystoscope unless the growth is situated around the vesical neck The larger growths demand open operation with destruction of the tumor by powerful diathermic currents Some of the larger sessile tumors are very difficult to treat even by excision

CLAUDE D HOLMES M D

SURGERY OF THE BONES JOINTS, MUSCLES, TENDONS

CONDITIONS OF THE BONES JOINTS MUSCLES TENDONS ETC

Albee F H My fascitis A Patl ological E plana
tion of M ny Apparently D ssimilar C nd
tions 1 J S g 19 7 3 3

Myofascitis is defined by the author as a local manifestation of a toxic condition of the blood with inflammation and symptoms at the fascial insertions in bones. When the fascial insertions are placed under traction the symptoms are greatly increased. In about 90 per cent of the cases the toxins are absorbed from the colon. The condition may be manifested by lumbago, sacroiliac lesion, scapular pain, elbow pain in the feet.

The treatment consists in the removal of foci of infection, lavage of the colon and a low residue diet.
FL EN, J B RAREY, R M D

Kanavel A B The Dynamics of the Functions of the Hand with Considerations as to Methods of Obtaining the Position of Function by Splints. *Med J 1* 1917 1: 598

In this paper which was one of a series of post graduate lectures delivered at Melbourne, Australia, Kanavel emphasizes the importance in the treatment of lesions of the hand of a knowledge of the function as well as the anatomy of the hand.

The primary actions of the hand are flexion, extension, abduction and adduction of the fingers, apposition of the thumb to the fingers and rotation of the hand. The actions of the wrist are supplementary to those of the hand. Loss of any of these actions leads to impairment of function.

Flexion of the fingers is carried out by the flexor tendons assisted by the lumbrical and small muscles effective when the wrist is dorsiflexed. In dorsiflexion of the wrist, passive tension of the flexors is increased, the tension of the extensor muscles is relaxed, and the proximal phalanges are held partially flexed. Flexion of the proximal phalanges is due to the lumbrical muscles and in dorsiflexion of the wrist the power of the lumbrical muscles is at its maximum.

Adduction and abduction of the fingers are carried out by the interosseous muscle aided by the extensors and flexors. In order to preserve this action it is well during treatment of the hand to keep the fingers slightly separated from each other about midway between abduction and adduction.

Flexion of the thumb is maximal when the thumb is abducted. Apposition of the thumb to the finger is one of the most important actions of the hand. While it may be taken over to a certain extent by the flexors and adductor of the thumb, it is by no means perfect under such circumstances. During

treatment the thumb must be kept not only abducted but also rotated so that its volar surface faces the volar surface of the finger tips.

The position of function of the hand is dorsiflexion of the wrist, flexion of the fingers to 45 degrees, slight separation of the fingers and abduction and rotation of the thumb to bring it in a position of apposition. If the hand is maintained in this position during treatment, minimal movement will suffice to give function. When there is a considerable loss of movement from nerve lesions or fibrosis, moreover, with the hand in this position it will be easier to apply splints and apparatus to break adhesions and obtain function.

During the acute stage of a lesion of the hand, splints may be used to maintain the hand in the position of function. Later they may be used to bring the hand into the position of function if this is not done during the treatment or to break up adhesions. It is essential first to get the hand into the proper position. When this has been accomplished, various attachments may be added to the splints to produce flexion, extension, abduction or rotation.

The splints used by Kanavel are made of 3 mm of hard aluminum and are covered with piano felt. They are fixed to the hand by straps and buckles. Rather than have a manufacturer make the splints, Kanavel prefers to make them himself in order to adapt them exactly to the requirement of each case.

The splint to produce dorsiflexion of the wrist is an aluminum plate made to fit the volar surface of the forearm and cut out at the lateral side of the wrist and under the thenar eminence to allow abduction and rotation of the thumb. At the wrist, the splint is cocked up to raise the palm. From the lateral side of the palmar plate, a rolled aluminum tube projects outward to rest between the thumb and the palm and hold the thumb in abduction. The angle at the wrist is increased daily as dorsiflexion progresses. Abduction and rotation of the thumb are produced by means of an elastic band fastened through a slot on the ulnar side of the splint and slipped around the proximal phalanx of the thumb. During the treatment for the acute stage of the lesion, the splint may be worn with or without the thumb attachment.

To correct extension deformity of the fingers, a U shaped bar is attached to the undersurface of this splint. Leather loops are fitted to the finger and a gentle pull is maintained by means of padding and buckles. The U bar is moved forward or backward depending upon the angle of pull necessary to correct the deformity. In the beginning of treatment for severe extension deformity, the author occasionally employs the method of

Dickson in which a plaster cast is applied to the forearm and hand and the fingers are gradually flexed by means of pads of piano felt forced between the splint and fingers

When there is flexion deformity of the fingers of moderate degree and the proximal phalanx is flexed a dorsal splint may be used. This splint fits the dorsum of the forearm and hand and is dorsally flexed at the wrist. To the back on the dorsum of the hand are riveted arms of aluminum which project over the fingers and are slightly separated from each other. The fingers are pulled toward these arms by means of springs or elastic bands. If the proximal phalanx is extended and the middle and distal phalanges are flexed the dorsal arms are continued out for some distance beyond the ends of the fingers and bent forward so that the pull of the tension will be in line with the forearm. There must be no dorsal pull.

The thumb is usually drawn into position by means of springs or elastic bands attached to an accessory arm which is riveted to either the volar or the dorsal splint.

Too great tension must be avoided. The desideratum is moderate tension over a long period of time. As the trophic condition of the hand is usually poor care must be taken to prevent pressure necrosis. The patient should know the rationale of the treatment and should be taught how to take the splint off and put it on. The splints are worn for from one to three months. In some cases they may ultimately be worn only at night.

MICHAEL L. MASON M.D.

Lusskin H. and Sonnenschein H. Low Back Sprain The Sacro Iliac Syndrome *Am J Surg* 1927 III 534

The authors report that a study of cases in which fractures of the pelvis had caused death showed no evidence that the upper portion of the sacrum had moved forward on the sacro iliac joint. In some cases however the iliac part of the gluteus maximus and hamstrings may pull the lower part of the sacrum forward shearing the joint surfaces. This results in injury to the cartilage and a true traumatic synovitis or arthritis.

In acute cases of such injuries the treatment should consist in rest of the part obtained by the application of adhesive strapping or a plaster of Paris cast. In chronic cases with spasm of the hamstrings the hamstrings should be stretched and the patient then turned over and sudden direct pressure applied over the upper part of the sacrum. For these procedures anesthesia is required. A plaster spica should then be applied for three months. In cases of recurrence operative fixation must be considered.

ELLEN J. BERKHEISER M.D.

Zadek I. and Jaffe H. L. Cysts of the Semilunar Cartilages of the Knee *Arch Surg* 1927 XV 677

Cysts of the semilunar cartilages of the knee were formerly believed to be ganglia resulting from soften-

ing and colloid degeneration of tendinous or peritendinous tissues about the knee produced by disturbances of nutrition following trauma. Phemister favors this theory but does not believe that the cysts are primarily of vascular origin or invariably associated with trauma. He and previous investigators failed to find endothelium lining the cysts but Zadek and Jaffe attribute their failure to the fact that they examined only large cystic areas which are not altogether typical. Ollerenshaw was the first to find flattened endothelium similar to synovial membrane endothelium and to suggest the developmental origin of the cysts. He believed that the cysts are the result of small endothelial nests included in the fibrocartilage during its development which began to secrete and became distended following trauma.

From a careful histological study of the smaller cysts Zadek and Jaffe conclude that such cysts are of congenital origin. They base this conclusion on (1) the multiplicity of the cysts (2) the occurrence of papillary synovial inclusions without cyst formation and (3) the absence of recent or old hemorrhage within the cysts.

They state that there is no evidence to support the view that the cysts are formed after tearing of the meniscus followed by invasion of the synovial membrane. The theory that the cysts are ganglia or are due to the degeneration of tissues beneath the cartilage and the joint capsule is refuted by the presence of an endothelial lining in the cysts of small or medium size.

The authors report the case of a young man who developed a cyst of the internal meniscus several weeks after he wrenched the knee.

ANTHONY F. SAVA M.D.

SURGERY OF THE BONES JOINTS MUSCLES TENDONS ETC

Bristow W. R. Arthrodesis *Proc Roy Soc Med* Lond 1927 XVI 111

Bristow suggests that arthrodesis be considered for cases of tuberculosis of the knee in children in which the bone is affected.

For old tuberculosis of the hip with deformity and fibrous ankylosis he prefers arthrodesis to osteotomy because the deformity is apt to recur after osteotomy. In the hip the intra articular method is liable to fail. Bristow therefore uses the procedure devised by Hibbs in which the anterior two thirds of the trochanter is transplanted with about 2 in. of the cortical bone of the shaft of the femur. This bone graft is pedunculated and left with the upper part of the trochanter attached by periosteum. The free end—that taken from the femoral shaft—is laid along the superior surface of the neck of the femur which has been bared for its reception and is firmly wedged into a groove cut in the ilium above the acetabular rim.

Bristow emphasizes the value of arthrodesis also in the treatment of joint pain following fracture. For

old malunited fractures of the ankle with evidence of traumatic or mechanical arthritis he regards arthrodosis as the procedure of choice.

For spinal fusion he recommends the operation devised by Hibbs.

S C WOLDENBERG M D

Ingeb Igtsen R Th Treatment of Septic Infection of the Knee (U b d B h d l e d s P y t h r g) I f i h g S d 9 7 l u 373

In exceptional cases of septic infection of the knee repeated punctures may bring about a cure but even in cases without complications a thrombosis probably the correct method of treatment.

In seven cases of septic infection without fracture of the bone end active movement was carried out according to the Willems method. The result was full mobility of the joint in five cases and only slight restriction of mobility in two cases. No other method drained the joint so completely as the active movements.

Active movement of a drain in septic knee is not painful but movement of a joint than an abscess in the capsule is associated with pain.

The movements must be active. Only active movements are able to empty the knee joint completely. During such movements the temperature falls rapidly and the general condition remains good.

In cases of abscess of the capsule periarticular abscesses can scarcely be avoided but after they are opened and drained they do not constitute a contra-indication to continued movements.

The treatment requires very close attention on the part of the surgeon and great patience and endurance on the part of the nursing staff. It can be used in the cases of adults as well as in those of children.

In septic infection complicated by fracture of the joint active movements cannot be recommended. In three such cases treated by the author the infection was cleared out with a satisfactory result.

Laeven A The Operative Treatment of Suppurative Infection of the Knee (Z p t B h d l g h w K g l k t g) D i I Z i h f C l 9 5 6

The author reviews twenty cases of severe suppurative infection of the knee operated upon in the Marburg Clinic reporting the indications for the operative method used the after-treatment and the immediate and late results.

To obtain drainage of the posterior cavity of the knee Laeven makes a deep lateral incision on each side of the knee opening the posterior slope of cartilage cover of the femoral condyles up to the intercondylar fossa. He removes both menisci with a tenotomy. The crucial ligaments then remain as a median d ligamentum which holds the tibia tightly to the femur. As the anterior parts of the joint and the popliteal bursa are also deeply opened on both sides to the patella the retention of exudate is no longer possible. The joint then

presents a widely open tissue space which is easily drained and packed. It is necessary to make the lateral incision deep enough so that there will be no depression in the soft parts behind the joint in which pus can accumulate. Great care must be taken not to injure the posterior capsule of the joint in the operation.

In the twenty cases reviewed aspiration and irrigation or bilateral anterior arthrotomy had been done without result or the process was so severe that there was little prospect of a successful outcome from the more conservative procedures alone. Fourteen of the twenty cases were cured. In five a thigh amputation was necessary later. One patient died of pneumonia seven weeks after the chiseling off of the condyles. Another succumbed three weeks after amputation of the thigh from a streptococcal septicæmia which developed from an abscess.

Horizontal chiseling off of the femoral condyles should be restricted to cases in which puncture irrigation or anterior opening of the joint has been unsuccessful or because of peritricular perforation with phlegmon or general sepsis. A cure can be expected from conservative treatment. With increasing experience the author has given primary excision of the condyles an increasingly wider application. This operation was performed as the primary procedure in eleven of the cases reviewed. In nine the knee joint was first opened by two lateral incisions. Following the operation complete ankylosis of the knee is to be expected.

In the after-care it is essential to fix the joint in the position in which ankylosis is to occur. Extension with slight flexion. In the cases reviewed this position was obtained by means of a plaster bandage plaster fixed with metal bands with extension apparatus. T splint Brown's splint or splint devised in the Marburg Clinic. In no case was one form of splint sufficient.

Of fourteen patients with bony ankylosis ten could be traced. The results in these ten demonstrated that in adults only slight shortening will occur if the knee becomes ankylosed in more or less extension. The operation removes no bone in the long axis of the leg. However slight degrees of shortening may result from deviation of the axis of the lower leg in the form of genu valgum or varum or slight subluxation of the knee joint.

The author reports three cases of resection of the anterior condyles for severe suppurative arthritis of the knee in children. The importance of possible injury to the epiphyseal line of the femur is often outweighed by the seriousness of the disease. If the leg can be saved there is a marked tendency to ard contracture in position of flexion. The frequently observed subluxation of the tibia is due to injury to the crucial ligaments. Horizontal condyle resection does not damage the epiphyses.

In conclusion the author states that deep lateral incision and horizontal chiseling off of the condyles can be used successfully also in severe synovial

tuberculosis with mixed infection of the knee joint. The results of this technique are apt to be particularly good in such cases when the patient is young.

DESCUL (2)

Pouzet, F. Operation in Tibiotarsal Tuberculosis of Infants. The Late Results. (*L'opération dans la tuberculose tibiotarsienne de l'enfant: ses résultats éloignés*). *Revue d'Orthopédie* 1921, xxxiv, 3.

The author reviews thirty-nine cases of tibiotarsal tuberculosis which were treated by open operation in the clinic of Nove-Josserand. In twenty-five cases the operation was performed late, after more or less prolonged conservative treatment. The fourteen early operations were done in cases in which there had been no immobilization or immobilization for three months had been of no avail and the lesion was of relatively recent development. In eighteen of the twenty-five late cases the operation was performed because of aggravation of the lesions with extension to the subastragaloid region and calcaneum manifested by clinical signs, the roentgenogram, or the lack of improvement after prolonged immobilization. In even cases the indication was early recurrence usually following a relatively slight primary accident.

In the fourteen early cases operation was performed because of the severity of the local lesion in twelve cases, acute symptoms in one case and the importance of the lesions revealed by the roentgenogram in one case.

A review of the history of the treatment of tibiotarsal tuberculosis on Nove-Josserand's service shows that in the period from 1896 to 1903 operation was performed in more than 50 per cent of the cases and astragalectomy was done in about 60 per cent of the operations. In the period from 1903 to 1921 operative treatment was given in only 37 per cent of the cases and only 30 per cent of the operations were astragalectomies. This change was due to the efficacy of conservative treatment.

Nove-Josserand removes not only the caseous bone but also any tissue that appears at all doubtful. In the technique used by him the peroneal arection for wide exposure of the subastragaloid and astragalo-caphoid area, as for double arthrodesis. After section of the ligament the foot is luxated inward. The astragalus is then raised with a bistoury and the calcaneum, caphoid and cuboid are examined. When these bones are diseased or of doubtful appearance they are extensively hollowed out, only a shell being left. Resection is done only when a particularly severe lesion extends beyond the limits of the bone. The establishment of adequate drainage is regarded as of the greatest importance.

After the operation the foot is put up in a circular plaster-of-Paris cast in the position necessary to make the mortise abut against the caphoid. The cast is left on for one month or, if there is no suppuration for two months. At the end of that time the drains are gradually removed. When the foot

has become sufficiently solid it is given a daily anesthetic bath if suppuration has occurred.

In the cases reviewed the astragalus was involved in thirty-nine, the tibia in twenty, the calcaneum in twenty-five, the caphoid in two and the cuboid in two.

Changes in the calcaneum were found in eight of the early cases and seventeen of the late cases and lesions of the tibia in eight of the early cases and fourteen of the late cases.

The length of time necessary for complete healing of the fistula and the resumption of weight bearing averaged eleven months after astragalectomy and thirteen months after tarsection. In favorable cases this was sometimes reduced to six or eight months.

The previous existence of an abscess or even of a fistula did not greatly modify the rapidity of convalescence after astragalectomy but prolonged it to an average of twenty months after tarsection. Delay of recovery seemed often to be due to the persistence of foci unrecognized at the time of operation. In four cases supplementary operations were necessitated by lesions of the tibia, calcaneum or caphoid that were not recognized at the time of the first operation, whether it was performed early or late.

Age has an influence on the duration of the treatment. Children under ten years of age healed more quickly than older subjects.

Of the thirty-nine cases a cure was obtained in twenty-eight (72 per cent) and will probably be obtained also in one case that has been treated comparatively recently. Nine of the patients died, one of them within five months and the others after from ten to twenty-four months from cachexia or associated lesions. This mortality of 23 per cent is high but is to be attributed more to the severity of the condition than to the operation itself. In the fourteen cases which were operated upon early because the severity of the lesion indicated that a cure by immobilization would be impossible, there were seven deaths—two in six cases treated by astragalectomy and five in eight cases treated by tarsection—whereas in the twenty-five cases operated upon late there were only two deaths—one in eight cases treated by astragalectomy and one in eleven cases treated by tarsection. Therefore the mortality was 50 per cent in the first group but only 8 per cent in the second. In a previous series of cases treated by immobilization alone the mortality was 45 per cent.

In four of the twenty-eight surgically treated cases in which a cure was obtained there was a slight late complication in the form of a small abscess which produced a fistula and disappeared following the extension of an equestrum either spontaneously or by curettage. In the four cases this complication developed one and a half, ten, eleven and fourteen years respectively after the operative cure but in no instance did it have serious consequences. The incidence of such late complications is slightly higher (14 per cent) in cases treated by

operation than in those treated by immobilization (6 per cent)

The author concludes that even in the most favorable cases operation does not yield as perfect results as immobilization. In a previous article he reported that of patients treated by immobilization alone 30 per cent had a normal function and 45 per cent had a very good function.

Pouzet concludes also that operation does not offer any greater permanency of cure. In the cases treated by immobilization alone the incidence of late recurrence was only 3.5 per cent and local small complications were less frequent than in the cases treated surgically. The general condition was the same in both groups.

A rule healing occurs more quickly in the cases operated upon than in those treated by immobilization but it does not occur as quickly as after other resection such as those in the knee. Especially in severe cases it is impossible to obtain healing by primary intention. The cavities are too large and irregular to become filled up in a short time. Nearly prolonged drainage is necessary. Moreover quick healing prevented by the poor general condition of the patients who are treated surgically. Especially in the case of young patients the mortality of operation is high.

The author believes that immobilization should be given as the though trial first and that operation should be performed when immobilization fails or to relieve the patient from the complications or the gravity of the obvious lesions that a good result cannot be expected from conservative treatment.

He states that the indications for operation can be extended only by careful investigation of the clinical or roentgenographic signs upon which the prognosis of the lesion may be based. The indication for operation in such immobilization will probably result in a cure from cases in which operation will be necessary later. W. L. R. C. BURR, M.D.

FRACTURES AND DISLOCATIONS

Andei O. I. It is possible to determine the age of a fracture by roentgen examination. And so to what extent? The following table of the epiphysis (S. H. Q. L. P. U. T. E. P. U. L. D. M. E. L. L. B. A. I. L. J. to add h. l. e. t. a. d. n. f. t. t. r. II. L. f. t. t. p. i.) Ch. d. g. d. o.
1 9 7 36

The author recently published an article on the roentgen appearance of fractures of different ages. He has found that the age of a fracture is indicated by the distinctness of the outlines of the fragments, the degree of opacity, the demarcation of the callus, the presence or absence of a structure within the callus itself, the appearance of the fracture line, and the degree to which the lamellar structure of the bone is restored.

In this table he discusses fractures of the epiphysis. Roentgen visibility of the callus begins about twenty days after the injury. Calcification pro-

gresses until after from four and a half to five months the outlines are distinct and the callus has reached the opacity of normal bone. The callus does not begin to show a lamellar structure until the end of the first year. The line of fracture disappears completely or almost completely in eight months but reappears later as a scar which is indicated by greater density of the bone.

The roentgen picture of fracture of the epiphysis differs from that of a fracture of the diaphysis in that during the first period the callus in the former type of fracture calcifies more slowly but later calcifies more rapidly until it reaches the opacity of normal bone. In fracture of the diaphysis the callus is generally smaller and the fracture line appears later.

AUDREY G. MOCAN, M.D.

Pfaff B. Pseudarthroses (Ueber Pseudarthrosen)
D. t. h. Z. Ch. f. Ch. 927 c. 7

In 433 cases of fractures of long bones and the patella which were seen during the five year period from 1920 to 1925 a pseudarthrosis developed in 40 (2.7 per cent). The cases included fractures of the lower leg, the forearm, the neck of the femur, the humerus and the patella and one fracture of a finger.

Of the fractures of the leg twelve were compound and all were produced by great force. With one exception the pseudarthroses occurred in the lower third of the leg. In ten cases the cause was a marked dislocation of the fragments. In ten others those of patients over fifty years of age it was poor regenerative power. Operation was performed in seventeen cases. One patient who was fifty nine years of age was given a supporting apparatus. Nearly all of the operations were performed within from three to eight months after the accident. Ether anesthesia was employed. The operations consisted in subperiosteal preparation of the fracture end, the removal of connective tissue and cartilage fragments, exposure of the medullary cavity and careful adaptation or wedging of the bone ends. In ten cases simple suturing with silver wire or rustless steel was done. In seven a wedge including periosteum, cortex and medulla was sawed from the fractured end of the tibia displaced upward into a groove made in the other fragment and fixed with wire sutures (Albee's fracture plastic of the tibia). At re-examination thirteen of these cases showed firm union. In four the bone still gave under strain but with the aid of a Brunn splint the patients were able to work. The compensation allowed in the latter cases was for disability of from 5 to 80 per cent.

The prognosis was poorest for the pseudarthroses of the forearm. In these cases also the fracturing force had been great. All of the seven fractures were compound. Operation was performed between the third and fifth month after the accident except in a case of sequestrum formation in which it was not done until after two years. The poor tendency to heal was due chiefly to marked displacement of the fragments. All of the cases of pseudarthrosis of the

forearm were treated first by another surgeon. In 11 of 15 cases of forearm fracture in which a tibial implant was fixed with wire at the primary operation no pseudarthroses developed. In four of the seven cases of pseudarthrosis simple wire suturing was done. In two a tibial implant was fixed by wiring and in one an implant was fixed by catgut. In three of the seven cases firm union was obtained. In two cases compensation was received for 50 per cent disability. In one of these there had been a co incident fracture of the humerus and injury of the radial nerve. In the other the radius still gave way under stress after the operation but the ulna was united firmly. Of the patients without firm union one received compensation for disability of 50 per cent and another forty five years of age received compensation for disability of 65 per cent because of greater loss of mobility of the arm. The third patient broke his arm again three months after the first operation and at the second operation the medullary cavity was found to have become closed again. The medullary cavity was re opened and a tibial implant was introduced. With the aid of a supporting apparatus the patient is now able to do any kind of work but is receiving compensation for 25 per cent disability.

The four pseudarthroses of the upper arm occurred in patients between thirty and forty years of age. The fractures were all compound. In three cases operation was performed about four months after the accident and in one after an interval of fourteen months. In one instance it revealed the interposition of muscle tissue. In three of these cases it consisted in intramedullary pegging the fitting together of step like notchings and fixation by wire suture. In one case periosteal suturing was done. Three months later firm union was found in all of these cases but the patients received compensation for disability of 10, 40, 45 and 50 per cent for three years.

In the five cases of pseudarthrosis of the tibia operation was followed by firm union. The pseudarthroses of the neck of the femur occurred in patients over sixty years old. In one case osteotomy was done but in the others no operation was performed. The patients are receiving compensation for disability of from 40 to 80 per cent. The one patient with pseudarthrosis of a finger refused operation.

Of forty pseudarthroses thirty four were operated upon and in twenty six (76.4 per cent) of the latter firm union was obtained. In three cases the pseudarthrosis was caused by too wide a gap between the fracture ends with the interposition of muscle tissue. Firm union was rarely obtained in the cases of patients more than fifty years old. The severity of the trauma and the correspondingly complicated nature of the fracture were important factors in the development of the pseudarthroses.

The author advises complete immobilization of the fractured part. Early strain on the broken bone before it has completely united favors the development of pseudarthrosis. The importance of a diet

rich in vitamins and of the administration of calcium and phosphorus is emphasized. The use of foreign material and dead tissue is condemned. A transplant may be fixed with wire or kangaroo tendon. The Borchardt instrumentarium for the Albee operation is of value.

An attempt to cure a case of pseudarthrosis of the lower leg by periarterial sympathectomy was unsuccessful. HAUMAN (Z)

Ely L W The Internal Callus An Experimental Study *Arch Surg* 1927 xv 930

As it is difficult to demonstrate internal callus in healing fractures either experimentally or by roentgenograms if the fracture is complete Ely solved the problem by producing an injury to the shaft of a long bone without breaking its continuity.

In experiments on eleven cats the anteromedial aspect of the tibia was exposed aseptically, the periosteum incised and a drill hole 2.7 mm in diameter was bored into the marrow canal. In six animals the wound could not be located later. The five others were examined from fourteen to sixty nine days after the operation.

The first stage in the reparative process was filling in of the hole by fibrous tissue which was continuous with the periosteum and extended deep into the bone marrow. In this tissue bone trabeculae were laid down without previous cartilage formation. In some instances the trabeculae were most numerous near the cortical surface and in others in the hole or in the marrow beneath the hole. Some bone formation occurred outside the cortex but this was not active in the repair of the defect. The photomicrographs show definite evidence of bone formation also on the cut margin of the cortex. RALPH SOTO HALL M D

Osgood R B Compression Fractures of the Spine Diagnosis and Treatment *J N M* 155 1927 lxxvii 1563

Compression fractures of the spine occur most commonly in males in the active period of adult life. They constitute 40 per cent of all fractures of the spine. In the great majority of cases the body of only one vertebra is crushed. In from 70 to 80 per cent of the cases the vertebra involved is the eleventh or twelfth thoracic or the first or second lumbar vertebra. In from 50 to 60 per cent it is the twelfth thoracic or the first lumbar vertebra.

The complications of compression fracture of the spine include neurological symptoms, fractures of the laminae, fractures of the transverse or spinous processes and fractures of the bones below the knee. In cases of fractures sustained in falls an examination should always be made for tarsal fracture. The mechanism involved in spinal compression fractures is acute hyperflexion of the spine.

The early typical symptoms of compression fractures of the spine may be masked by the general shock and the pain of associated bruises and fractures. The late symptoms are serious discomfort, disability, the development of a kyphosis, and pain

local ed in the injured area and radiating down the extremities. These symptoms may not develop until 1 month or years after the injury.

Fracture of the sacrum whether impacted or crushed fractures heal quickly and permanently with very little treatment. In fractures of movable vertebrae without fracture of other elements than the body of the vertebra there is a full return of function in from four to six months following recumbency, hyperextension with the spine immobilized in a plaster jacket or the use of the Wallace spinal bed. At the end of six or eight weeks in such cases the upright position and ambulatory life may be resumed gradually, the spine being protected from ten to sixteen weeks longer by a stiff removable jacket. In the last five or six weeks of the treatment physical therapy may be given. The author has had no experience with early cases complicated by fractures of the laminae without neurological signs. Late cases with disability and pain progress well with utopoeia. In Osgood's opinion a trial of conservative treatment is advisable in many instances as well as in the majority of early cases.

ANNONY F. SAVA, M.D.

Gr m n n M The Treatment of Fracture of the Thoracic and Lumbar Vertebrae (Z. B. H. d. l. u. g. d. F. k. t. n. d. B. t. n. d. L. d. n. b. l.) Z. t. l. b. f. C. l. 971 54

In fracture of the thoracic and lumbar vertebrae early operation has little chance for success. In cases of total lesions operation is not to be considered. In partial lesions the cause of the symptoms, not compressions, but contusion of the vertebral fractures without cord symptoms are usually treated conservatively with bed rest in a suitable position, but there is a difference of opinion as to the length of time the bed rest should be continued and as to whether after the patient is up the spinal column should be supported by a brace.

The author reports four cases of vertebral fractures which illustrate some of the difficulties encountered. One is the case of a sixty-year-old laborer with a compression fracture of the second lumbar vertebra. The patient is still unable to work after

six months of bed rest and the wearing of a brace for a year. A striking finding in this case was marked osteoporosis of the entire spinal column.

Another case was that of a girl twenty-five years of age who had a compression fracture of the second lumbar vertebra. As the fracture was still unhealed after four months of rest in bed operation was necessary.

The third case was that of a man forty-three years of age who sustained a compression fracture of the third lumbar vertebra. After a short time this patient became symptom free and after six weeks he was able to be out of bed nearly all day. At the end of nine weeks he was discharged from the hospital without any disability. Fifteen weeks later he was readmitted because of local and radiating pains. Examination then revealed a marked kyphosis and a distinct gibbus. So-called Kummell's deformity is not always due to a fracture. It may sometimes be produced by trauma which injures the internal tissue of a vertebra so that as demonstrated by Christen, Schmorl and Goecke a degeneration of the cells results and the vertebra which appears intact in the roentgen picture breaks down in the course of weeks or months.

The fourth case reported by the author was that of a twenty-year-old girl who had a compression fracture of the second lumbar vertebra. As bony union failed to occur a graft from the tibia was implanted. After eight weeks the patient was able to leave her bed without a supporting apparatus.

S. GERMA, M.D.

Olecranon H. Som. Considerations on the Treatment of Fracture of the Olecranon (Qu. l. g. d. f. t. m. n. t. d. e. f. a. t. d. l. t. g. l.) 111 1 95 971 353

The author reports a case of transverse fracture of the body of the ulna with posterior and displacement of the posterior fragment and fracture of both malleoli. A posterior curved incision was made and the bony fragments were fixed with metal nails. Tenotomy of the Achilles tendon was performed. Recovery resulted with good mobility and satisfactory function.

SURGERY OF THE BLOOD AND LYMPH SYSTEMS

BLOOD VESSELS

Gregora H. Gangrene of the Extremities Following Subcutaneous Rupture of Blood Vessels by Dull Force (*Extremitäten gangrän nach subcutaner Gefäßruptur durch stumpfe Gewalt*) *Beitr. klin. Chir.* 1927 vol. 199, 229

Gangrene of the extremities may result from subcutaneous injuries causing marked destruction of the deeper tissues or much less frequently from lesser trauma injuring the main blood vessel. The author reports four cases of the latter type seen in Schloffer's clinic since 1911. In three cases the popliteal artery and in one case the femoral artery was injured. In three cases the artery was torn transversely and in two of these this injury occurred as a complication of subcutaneous fracture. In one of the latter the vessel was torn by a fragment of the broken bone and in the other by stretching or compression.

A complete tear of a vessel may sometimes heal spontaneously as the result of involution of the intima. Partial subcutaneous tears of blood vessels have a more unfavorable prognosis than total ruptures. Tears of the inner vascular membrane resulting from subcutaneous injuries and followed by thrombosis may lead to gangrene. Vascular injuries are most common in the lower extremities because of the proximity of the blood vessels to the bones and their fixation in the fasciae and aponeuroses such as Poupert's ligament, the fascia of the adductor canal, the soleus tendon, and the ligamentum interosseum. They occur most commonly at the sites of bifurcation of the vessels.

The most common causes of vascular injuries are fractures. With the exception of fractures of the forearm all fractures may lead to gangrene. Subcutaneous injuries of blood vessels due to lacerations are most common in the upper extremity but are relatively seldom followed by complete gangrene.

The author reports a case of tearing of the brachial artery and vein in the sulcus bicipitalis in a dislocation of the elbow which healed following ligation.

In the lower extremity only anterior dislocation of the knee plays a rôle.

Besides fractures and dislocations all types of dull injuries such as bruises, forced muscle action, squeezing and over stretching may lead to gangrene.

The diagnosis of a recent vascular tear is frequently difficult. Important signs are disturbances of sensitivity and motility, coldness and discoloration.

The prognosis for preservation of the limb is not favorable but the mortality has decreased in recent years. The prognosis is very unfavorable when the popliteal artery is completely severed as the collateral system is easily obstructed by the resulting hematoma. In tears of the femoral, axillary and brachial

arteries the prognosis is often doubtful. The formation of an aneurism is favorable but this is rare in subcutaneous injuries.

In the treatment the injured vessel should be immediately exposed and an attempt made to suture it. Even if a thrombus forms later at the site of suture the suturing allows time for the formation of collateral circulation. Ligation is in general less favorable than vessel suture. The advisability of simultaneous ligation of the vein is disputed. The formation of a compressing hematoma must be prevented.

In the discussion of this report Gold cited a case of gangrene of the toes following the use of glycerogen in Basedow's disease (0.5 c cm twice daily for seven days and 1.0 c cm twice daily for two days). In this case the removal of the second and fifth toes of the right foot became necessary. KORNIG (Z)

Brown G. E. and Henderson M. S. The Diagnosis and Treatment of Arterial Vascular Disease of the Extremities. *J. Bone & Joint Surg.* 1917, 16, 613

The authors present a classification of the arterial disturbances of the extremities. Diseases of the peripheral arteries are divided into two main types depending upon their functional or organic nature. Each of these is subdivided according to local or general distribution. The organic or obliterative types of disease consist of two main types: thromboangiitis obliterans or Buerger's disease and arteriosclerotic disease with or without thrombosis. Diabetic gangrene is a form of the latter condition. In the authors' experience these types constitute more than 95 per cent of the organic diseases of the extremities. Of the functional types there are two main distributions—the vasospastic which includes a large group of disturbances and in its more typical form is recognized as Raynaud's disease and the vasodilator which in its typical form is known as erythromelalgia.

The treatment of the various vascular diseases is necessarily different for the two main types. In the vasomotor types with the color and low surface temperature indicating vasoconstriction treatment is not indicated in the absence of pain or trophic changes. Prophylactic measures are advised for protection of the extremities in the colder months of the year, frequently a change of climate is necessary. In many of the mild painless cases reassurance is the sole requirement. For Frank Raynaud's disease of the hands no curative treatment is known but in Raynaud's disease of the lower extremities lumbar sympathetic ganglionectomy is curative. The treatment of erythromelalgia and allied vasodilator syndromes is most unsatisfactory. Radium has been used over the areas of burning

but the results have been questionable. In one case in which roentgen rays were applied over the lumbar and sacral spine there was some improvement. Frequently the treatment resolves itself into symptomatic relief of the attacks of burning by frequent immersion of the feet in cold water. Partial control of the symptoms is obtained by elevation of the lower limb at night and the use of atophan.

The cases of organic occlusive disease of the arteries are treated differently. In the early or pre gangrene stage the treatment is protective and active. The protective measures include extreme care in the handling of the feet, the use of proper shoes and protection against surgical tinkering and traumatic and thermic insults. The active treatment is directed toward increasing the blood supply in the collateral circulation. Postural exercises, contrast baths for the extremities, graduated exposure of the parts to electric light bulbs and restriction of activity are most important measures which give good results if continued long enough.

In cases of gangrene and continuing pain the chief problem is the relief of the pain. Ordinary narcotics are useless. The injection of fougere protein will give relief for a variable period in 80 per cent of the cases. If the pain cannot be controlled measures may be carried out to heal the trophic ulcers. If the pain cannot be controlled surgically, amputation of the true intertarsal line in the foot is the most satisfactory path—rarely is bilateral.

In cases of organic closure of the main vessel due to thrombosis, the best is an amputation above the knee has been the usual surgical procedure. Allen and McHardy have shown that amputation below the knee is successful in 80 per cent of cases provided preoperative and postoperative measures of treatment are carried out. Similar results cannot be obtained in cases of gangrene due to arteriosclerotic disease. Lumbar ganglionectomy has been performed by Adson in eleven cases of thromboangiitis obliterans. In nine the results were satisfactory. Relief of pain was complete and large trophic ulcers healed. The application of this operation rests entirely upon careful selection of the cases, the possibility of vasodilatation in the collateral vessels must be demonstrated before operation. In selected cases encouraging results have been observed. The results of the operation in this disease can be determined only after a long period of postoperative observation.

Farmer H. L. Abdominal Aneurism with a Report of Three Cases. *J. R. Surg.* 1927 55

Aneurism of the abdominal aorta is comparatively rare. Syphilis the chief underlying cause. The

aneurism usually occurs in the upper portion of the abdomen proximal to or in the region of the coeliac axis. As a rule the sac presents anteriorly and to the left side. The symptoms are variable depending largely upon the size and location of the aneurism. Pain is common but varies in its character and intensity. Pressure symptoms may predominate. Clinically the most valuable objective finding is an expansile pulsating tumor situated either in the epigastrium or posteriorly in the left upper lumbar region.

Abdominal aneurism must be differentiated from tabetic crisis, neuritis, gall stones, pancreatic stones, lead colic, appendicitis, peptic ulcer, gumma of the liver, nephrolithiasis and benign and malignant tumors of the stomach, pancreas, kidney and omentum. Abnormal throbbing of the aorta noted in neurotic and hysterical states, forceful pulsation in aortic insufficiency and prenaternal pulsation found in anemia and in arteriosclerosis in old men with thin abdominal walls must not be mistaken for signs of aneurism.

The roentgen examination may be of great aid in the diagnosis. Direct visualization of the tumor fact requires special effort but is possible if there is sufficient calcification in the walls of the sac and vessels. If the aneurism is located high under the dome of the diaphragm it may be directly outlined by the adjacent air bubble in the stomach and its pulsation may be studied under the roentgenoscope. The aneurism may be directly visualized with the aid of pneumoperitoneum. It may be revealed also by injecting air into the colon.

The indirect signs of abdominal aneurism are no less significant than the direct signs. The sharp cleavage cut areas of destruction in the bodies of the vertebrae are fairly typical. The intervertebral disks remain intact. In each involved vertebra there is an individual crescent shaped area of bone destruction. Usually there is involvement of more than one vertebra and the spine presents a scalloped appearance. As a rule the bone destruction occurs along the left anterior aspect of the vertebral bodies. The lower ribs on the left side or the transverse processes of the upper lumbar vertebrae may show rarefaction from pressure absorption.

The prognosis in abdominal aneurism is unfavorable. The duration of the condition varies from three months to three years. The only treatment with iodides and mercury has relieved the symptom but has produced no decrease in the size of the sac. Death usually results from rupture of the aneurism.

Three cases are reported in detail with the history and the roentgen and autopsy findings.

ADOLPH HARTUNG, M.D.

SURGICAL TECHNIQUE

OPERATIVE SURGERY AND TECHNIQUE POSTOPERATIVE TREATMENT

Meleney F L Humphreys F B and Crisp L
An Unusual Fatal Operative Wound Infection
Yielding a Pathogenic Anaerobe of the Gas
Gangrene Group Not Hitherto Described with
Direct Reference to Catgut as a Source *Surg
Gynec & Obst* 1927 xlv 775

From the lesion in a fatal operative wound infection the authors isolated a new species of pathogenic anaerobic bacillus of the gas gangrene group which they call *clostridium oedematoides*. The source of the infection was traced to surgical catgut which was not sufficiently sterilized.

Gas gangrene is not a specific infection but is usually a mixed one. Several varieties of spore bearing organisms (called generically *clostridia* in recently adopted nomenclature) can be isolated from the great majority of traumatic cases. These *clostridia* are naturally saprophytic inhabitants of the intestinal canal of man and domestic animals and of the soil contaminated by their excreta. They may therefore occur in catgut which is manufactured from the muscularis mucosæ of the intestines of sheep.

Of the many anaerobes obtained from gas gangrene infections only a few have consistently met the requirements necessary to establish them as causative agents of the disease. These are *clostridium welchii* (*bacillus aerogenes capsulatus*), *clostridium oedematis maligni* (*vibrio septique*) and *clostridium novyi* (*bacillus oedematis maligni* II). Each of these produces *in vitro* a highly specific exotoxin for which a specific antitoxin may be prepared.

The organism which the authors recovered from a fatal case is culturally different from the three others. It produces a true exotoxin not neutralizable by the antitoxins of the others and its specific antitoxin is ineffective against the toxins of the others.

The histories of patients in the same hospital who were operated upon about the same time and developed fatal wound infections of the gas gangrene type are reported. Clinically the condition was characterized by a brawny red oedema of the abdominal wall around the wound, severe pain at the site of the lesion, fever, leucocytosis, a rapid and feeble pulse, nausea, profuse perspiration and toward the end, somnolence, irritability, profound prostration and circulatory failure. The organism described was obtained at autopsy on one of these patients. No cultures from living patients were positive since large pieces of deep tissue are necessary for anaerobic culture work. The superficial oedema is only a toxic reaction; usually the organism does not penetrate to the surface.

The chromic catgut used in the operating room at the time the cases reported were operated upon yielded *clostridium novyi* in investigations made by another bacteriologist and two strains of the newly discovered species: two strains of hæmolytic *clostridium welchii* and two other non pathogenic spore forming organisms in investigations made by the authors.

Clostridium oedematoides is a large, strictly anaerobic, actively motile, gram positive bacillus with square end. Spores are formed readily in plain broth. On sheep's blood agar the colonies are discrete, gray and stellate with irregular margins. They produce no hæmolysis. In the presence of 1 per cent dextrose, large quantities of gas and acid are formed. The organism was lethal in small doses for eight species of laboratory animals tested. It may be recovered from the lesion, peritoneum and blood. The typical lesion in the guinea pig is an extensive, slightly hæmorrhagic oedema of the subcutaneous tissues which is neither as extensive nor as colorless as the lesion of *clostridium novyi*, nor as hæmorrhagic as the lesion of *clostridium oedematis maligni*. Gas formation is minimal. Oedema is most marked when death occurs slowly.

The organism produces an exotoxin which is filterable and thermolabile and when injected in sublethal doses into animals stimulates antitoxin formation. Reciprocal tests with sera and toxins and cultures of the other pathogenic anaerobic bacilli of the gas gangrene group showed it to be a different species. The article includes a chart differentiating the three recognized pathogenic anaerobes and this new species as to spore formation, colony appearance, saccharolysis and proteolysis.

The pathogenicity of the organism for man is indicated by its occurrence in a fatal human lesion and its lethal effect on animals. The authors emphasize that manufacturers should adequately demonstrate the sterility of all catgut by both aerobic and anaerobic methods. MAURICE MEYERS, MD.

ANÆSTHESIA

Hatcher R A. The Rectal Administration of Ether and Oil and Morphine, Magnesium Sulphate and Ether in Surgery and Obstetrics. Report to the Council on Pharmacy and Chemistry. *J Am M Ass* 1927 lxxviii 2114, 2189, 2258.

Hatcher states that the administration of ether with oil or liquid petrolatum constitutes an advance over other methods for the rectal or colonic administration of ether.

Anæsthesia is induced readily with varying proportions of ether and oil but it is probable that a

mixtures of equal volumes of ether and olive oil or liquid petrolatum is the most suitable for inducing anaesthesia by rectal instillation after the subcutaneous injection of morphine. Such a mixture readily gives up the ether for absorption into the circulation in adults as well as in children and probably retards the testine less than mixtures containing higher percentages of ether.

As soon as the operation is complete the bowel must be washed and all residual mixture removed. The buttocks and thighs should be protected by an application of petrolatum to prevent irritation from ether that escapes. The patient must be told to resist the desire to expel the mixture. Pressure against the anus must be necessary to prevent voluntary expulsion. Some patients cannot retain a dormant child. The patient should be kept in the lithotomy position.

The ether is absorbed from the colon and rectum. Therefore the warmed mixture should be introduced high up in the rectum. About ten minutes being taken for its action.

Rectal or colonic ether anaesthesia has the following advantages:

1. It spares the respiratory passages to some extent and causes less irritation than the inhalation of ether.

It is associated with less larval and bacterial secretions.

3. It lacks certain disagreeable features of halothane anaesthesia connected with the reflexes from the face and respiratory passage.

4. The stage of excitement is short and oft-lacking.

5. There is no nausea and vomiting during the anaesthesia after the operation.

6. It leaves the field clear for operations about the face and head.

The method has the following disadvantages:

The depth of anaesthesia is not under such perfect control as in inhalation anaesthesia and this disadvantage is so great that it must often outweigh all of the advantages of this method. The lack of perfect control of anaesthesia means death.

The anaesthetic causes some irritation of the intestines, vomiting, and severe and even fatal irritation with haemorrhage in an undetermined small number.

3. It probably causes greater injury to the liver than does the inhalation of ether in like amounts. The method fares with anaesthesia by inhalation certain drawbacks.

1. The contraindications are the same as those for general anaesthesia with ether being based on its pharmacological actions.

2. It must be employed in a room in which there is an open flame.

3. The patient must be kept under observation until consciousness returns because the tongue may

fall back into the throat and induce fatal asphyxia. This sometimes means prolonged observation by a trained anaesthetist or nurse.

4. It is not always sufficient for deep anaesthesia without the preliminary injection of morphine or the subsequent use of ether by inhalation. The contraindications of morphine must be considered.

It is certain that inhalation anaesthesia conducted with skill is safer than rectal anaesthesia followed as a routine procedure without judgment care and skill. Until the necessary information is available the dose of ether should be graduated according to the weight of the patient. It seems probable that 2 gm of ether per kilogram of weight is the maximum that can be instilled into the rectum with safety following a hypodermic injection of from 1 to 2 gr of morphine sulphate, the dose of which is indicated by the weight of the patient.

Whether there is a danger of postoperative pneumonia following rectal or colonic anaesthesia than inhalation anaesthesia cannot be stated because of the lack of adequate statistical studies of the occurrence of such postoperative pneumonia.

The use of morphine during the first stage of labor and of ether or chloroform for the second stage appears to be the accepted procedure. Morphine sulphate in a dose of 1/2 gr for a woman of average size is usually without danger to the mother and associated with little danger to the child provided it is not used within less than four hours of delivery and the subsequent use of ether is made with due understanding of the action of morphine on the respiratory center. The use of morphine in doses exceeding an average of 1/2 gr for the woman of average size and the subsequent use of ether or chloroform involves danger to the child. The danger is as the dose of morphine increases. It seems obvious that the dosage of morphine and ether should be calculated for the weight of the patient. For the woman of average size the maximum dose of ether used after a stage of morphine during labor that does not exceed three hours without complication is about 1/2 oz. Obviously the bowel should be emptied when labor is completed.

The question of the value of magnesium sulphate with morphine and ether cannot be answered at present. There is no satisfactory evidence that it increases the action of morphine or that of ether and animal experiments show that there is a summation of the toxic effects. It is probable that a like summation of therapeutic effects occurs.

There is pressing need of systematic experimental studies of the drugs used during labor and of statistical studies showing accurately the possible analgesic action of each drug on women and the toxic effect on the child. S. MCEL KAH, M.D.

PHYSICO-CHEMICAL METHODS IN SURGERY

ROENTGENOLOGY

Schaefer W. The Action of the Roentgen Rays in Bacterial Inflammations. An Experimental Pathologico Histological and Clinical Study (Die Wirkung der Roentgenstrahlen bei bakteriellen Entzündungen eine experimentell pathologische histologische und klinische Studie) *Arch f klin Chir* 19 7 cxlvi 394

The author applied roentgen rays locally to rabbits that had been infected by an abscess forming strain of staphylococcus. After six hours no difference could be noted between the animals irradiated and those not irradiated. Later the first group showed an increase in the cellular inflammatory infiltrate—an increase in the inflammatory process that led to speedier breaking down of the abscess and more rapid healing. This occurred in eleven (45.8 per cent) of the twenty four experiments. In seven the inflammation was less and the healing was retarded. In four no difference was noted between the irradiated and non irradiated animals.

The effect of the roentgen rays is therefore in constant. It begins only when symptoms of inflammation are already present the tissues then being more sensitive to the rays. From the pathologico anatomical standpoint the manner in which the roentgen rays act upon inflammation is similar to the mode of action of other conservative methods of producing inflammation such as poulticing and Bier's hyperæmia. The roentgen ray however has the important advantage of exact dosage and may be used for localized deep action. Other methods are not to be abandoned but in each case it must be decided which method or combination of methods should be employed.

SILVERS (Z)

MISCELLANEOUS

Granger F B. The Use and Abuse of Physical Therapeutics. *J Am Med Ass* 1927 lxxix 1194

Physical therapeutics may be of value in the following pathological conditions: non union or delayed union of bone, low back injuries, adherent scars, bursitis, peripheral paralysis, neuritis, pneumonia, acute myositis, myoitis ossificans, traumatic sprains, fractures, arthritis, surgical tuberculosis, tuberculous peritonitis and various skin conditions.

It is an abuse of physical therapy to employ it except (1) after a careful physical and laboratory

examination (2) as an adjunct to other standard and well recognized procedures (3) in conjunction with other branches of medicine and surgery (4) after a definite attempt to apply proper physiological effects to the predetermined pathological condition and (5) when every care is taken not to use it instead of other proved methods that may be superior.

Technicians should be discouraged from running offices of their own and only physicians trained in physical measures should be assigned to take charge of physical therapy departments.

In conclusion Granger emphasizes the danger of the treatment habit.

JOHN S COULTER M D

Sequeira J H and O Donovan W J. Light Treatment at the London Hospital. *La rect* 1927 ccviii 1118

Since the Light Department of the London Hospital was opened on May 1, 1900, 663 cases of lupus vulgaris have been treated by the local application of concentrated light (Finsen treatment). Seventy per cent of the patients have been cured, 11 per cent still require occasional treatment, 16 per cent are to be classed as benefited and 3 per cent were uninfluenced.

In July, 1902, the light bath treatment was introduced. This is given with the use of a 70 ampere arc tungsten paste carbon poles and various forms of mercury vapor lamps. Since the local treatment has been supplemented by application of the light to the general body surface, the incidence of cure in lupus vulgaris has been increased to 90 per cent. The authors draw the following conclusions:

1. The results are independent of the cutaneous reaction and the extent and degree of pigmentation.
2. Children are usually benefited more rapidly than adults.

3. The increase in the body weight is small. A rapid decline in the weight should lead to immediate suspension of the light bath treatment and a search for active pulmonary invasion.

4. Estimates of the temperature and pulse rates are of no particular value, but it is best not to treat pyrexial cases.

5. The slight leucocytosis observed in early cases has no clinical importance.

6. There is no doubt of the marked improvement in the general health and the mental outlook. This is independent of any change in the basal metabolism.

JOHN S COULTER M D

MISCELLANEOUS

CLINICAL ENTITIES—GENERAL PHYSIOLOGICAL CONDITIONS

Lion G Symmet lcal G ngrene of the E tre
mitles De eloping During an A ute Infectious
Disea e and Running tle Cou se of a Tran
s ent Complication (Ga gè ymèt q d
 t ém té dé l ppé d l maladi
 f t ag té ol tal f ç d ompl
 t n p gè) B ll t ém S méd d l dp
 d P 9 7 l 45

The pat ent hose case s reported a woman sixty eight years of age was recovering f om an acute se e e attack of bronchopneumonia presum ably of pneumococcic origin Du ing the cou se of a profess onal v sit L n observed the sudden appe rance of cyanosis of the extremities and the t p of the no e

The cyano disappea ed on pressure but in the center of each cyanotic area there a a small ed spot hich pe sted The pulps of the fingers were espec all flected but a few spots appeared also on the d r al su face f the hand These spots vere very pa nful and s oll n

During the following six days the cyanosis dimini h d in the al e dy affcted parts but ap pear d in ne reas each th a hem rrhag c spot in the center The finge s of the left hand both great toe the chin both ea s and both cheeks becam cyanotic

A new attack e ght days later invol ed espec ally the hands and feet

Tv enty four days after the onset of the conditi n there er superfic lgan, enous area in the process of sep ration on the tip of the nos both cheeks the lobules of both ears and umerous parts of the do s l and olar surfaces of the hand By the end of a month the g ngren us areas had sep rated from the nose and cheeks but it as almost six months before the hand ere entirely clea

During second attack of bronchopneumonia there as no retu n of the co ditio alth ough the patient complained that she e perienced a ensation of cold in the sca s hich remained from the previous lesions

The c ndit on v s diffe entiated f om Raynaud s disea e by its sudden o set thout premonito y syncope and asphyxa the rapid development of the gangr and the subsequent course The suddenness of its appearance suggested purpura but the l ve and spleen were not enlarged and except for the appa rance of clumping f the blood platelets the blood examinati n was what was to be e pected n a eve e infect on When the patient s blood se um as mi ed with the blood of other persons clumping of the th ombocytes

occurred but after the gangrene had cleared up it no longer produced or showed clumping

MICHAEL L MASON M D

He tzle A E Chromoma of the F rea m 4
 S g 9 8 l x vi 99

Hertzler reports three tumors of the fore rm v hich he believes were derived from chromatophore cells The fact that these tumors ere free from p gment does not a gue against this origin because the chromatophores are mai ly reparative in character they absorb athe than form pigment

The tumors hich Hertzler calls chromomata or chromata differ clin cally from the melanomata in being more destructive locally and in metastasiz ing more slowly and o ly by way of the lymphat cs They resemble the tumors occurring in the foot wh ch Hertzler described in 1914 They beg n as painless subcutaneous nodules ha ing no connection v ith the sk n They slowly destroy the skin and mrv inv lve al o the deeper structures They do not appear to be amenable to a y sort of treatment

Histologi ally they are made up of small irregu l rly a ranged spheroidal cells with deeply staining nucle scattered thro ghout a connective tissue which is r ch in capillaries The vessel n the stroma tend to ha e thickened endothelial walls Altho gh the general appearance is that of a react e pr cess close scrutiny of the small cells led H rtzler to conclude that these g owths are neoplast c Al eol ar arrangement of th small cells may be present in the o ginal tumo or the lymphat c metastases

MICHAEL L MASON M D

Ullmann H J The Lead Treatment of Ca cer
 S g G) & Ob t 9 8 l 9

Colloidal lead orthophosphate is much le s tox c to the organism than the colloidal metal or the other salts Solutions of lead rthophosphate keep in definitely at room temperature and appare tly do not alter their toxicity with age

In the author s case of cancer a rout e e am na t on of the u ine a d blood is made the kidney funct on is estimated from the dye test and blood smears are searched at intervals for st ppled cells The solut on of colloidal lead phosphate is i jected intravenously the amount vary ng with the weight of the pat ent and the size of the tumor The average dose is 80 mgm This is repeated eekly until from 300 to 500 mgm have been given

The eye f lead in the t eatment of cancer holds suffic t omise to war a t thorough invest ga tion It is necessary in order to obtain the m xi mum benefit to combine the r e tgen ray or radium with lead inject o s

JOSEPH K KARAT M D

GENERAL BACTERIAL PROTOZOAN AND PARASITIC INFECTIONS

Platou E S Schlutz F W and Collins L
Erysipelas A Clinical Study of the Treatment
of This Disease *Am J Dis Child* 1927 xxiv
1030

The authors report results obtained in cases of erysipelas subjected to the roentgen ray treatment evolved by Rigler roentgenologist of the Minneapolis General Hospital. Over all areas the distance from the tube to the skin was 25.4 cm. A filter of 2 mm of aluminum was used. The readings were 111 kv (peak) corresponding approximately to a 7 in. spark gap between moderately blunt points and 5 ma. were used for five minutes over each area. This was considered a dosage sufficient to produce a mild erythema when the oblique radiation from each area was included. In the treatment of the scalp the duration of the irradiation was reduced to four minutes to avoid the production of permanent epilation.

Eighty cases were treated by roentgen ray irradiation alone thirty with Birkhaug's erysipelas antitoxin alone and ten with roentgen ray irradiation and antitoxin combined. There were thirty five control cases.

In the cases treated with the roentgen ray the temperature returned to normal in one and a half

days and the pain toxæmia and general malaise subsided in two days. In the control group the corresponding periods were three and four tenths days and eight days. Extension of the disease occurred in 21 per cent of the irradiated cases and 68 per cent of the control cases. The mortality was 6 per cent in the irradiated cases as compared with 23 per cent in the control cases although the former group contained twice as many infants under three years of age.

In the cases treated with erysipelas antitoxin the temperature returned to normal in two and two tenths days and the symptoms other than fever subsided in three and eight tenths days. In the control group the corresponding periods were three and three fourths days and eight days. Extension of the disease occurred in 46 per cent of the cases treated with antitoxin and in 68 per cent of the control cases. The mortality in the cases treated with antitoxin was only 6 per cent one fourth the mortality of the control group.

From these observations the conclusion is drawn that roentgen ray irradiation and the administration of antitoxin in adequate dosage intravenously intraperitoneally or intramuscularly are of definite value in the treatment of erysipelas. In the ten cases in which both methods were employed the prognosis was considered especially grave.

ROBERT M GRIER M D

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ablation PATEL Lyon chir 1927 xiv 538
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anterior concavity H. L. ROCHER and A. MOUCHET
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the neck of the astragalus K. VOGEL Zent. albl. f. Chir
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metatarsal) K. GRIER Zentralbl. f. Chir 1927 liv
259
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surgery ACIFLIS Zentralbl. f. Chir 1927 li 2157
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of the scapula J GROSSMAN Med Times 1927 liv 276

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coracoclavicular syndesmoscopy BOTREAU ROUSSEL Arch
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humerus osteosynthesis with a Y shaped plate inserted
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and H ROUVILLOIS Bull et mém Soc nat de chir
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of the os naviculare carpi L GOLD Beitr z Klin Chir
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end of the femur A NUSSBAUM Beitr z klin Chir
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skeletal traction M B STOKES South M J 1927 xv
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the femur R LASCAUX Presse méd Par 1927 xxxv
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Blood Vessels

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genic observations A SZARY and A LICHTWITZ Bull
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cancerous metastasis I ELL KINDBERG and R CARCIN
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the skull H SCHLOFFER Beitr klin Chir 1927 cxi
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Cancer mortality W R DAY Med J Australia 1927 ii 832

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CONTENTS

I	Index of Abstracts of Current Literature	iii
II	Authors	ix
III	Editor s Comment	x
IV	Collective Review	345 355
V	Abstracts of Current Literature	356 422
VI	Bibliography of Current Literature	423 446

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CONTENTS—MAY, 1928

COLLECTIVE REVIEW

THE TREATMENT OF FURUNCLES AND CARBUNCLES *Frederick Christopher M D F A C S Chicago* 345

ABSTRACTS OF CURRENT LITERATURE

SURGERY OF THE HEAD AND NECK

Head

- HAYN F A Sinus Pericranii (Reducible Blood Tumor of the Cranium) Its Origin and Its Relation to Hæmanoma and Abnormal Arteriovenous Communication Report of a Case 356
- MOULONGUET P and PEYNET A Mixed Tumors of the Face 356
- BASS M H Acute Osteomyelitis of the Superior Maxilla in Young Infants 356

Eye

- COHEN M KILLIAN J A and KAMNER M Comparative Chemical Studies of the Ocular Fluids of the Cerebrospinal Fluid and of the Blood 357
- COSGROVE K W and HUBBARD W B Acid and Alkali Burns of the Eye 357
- ROSENOW E C Focal Infection and Electric Localization in the Pathogenesis of Diseases of the Eye 357
- WILMER W H Clinical Aspects of Ocular Tuberculosis 358
- BLED SOE R W Perithelioma of the Orbit 358
- TOROK C and REDWAY L D A Preliminary Report of Three Cases of Keratoconus 358
- MORGAN O G and HOWITT F D The Application of Heat by Diathermy in Iridocyclitis 358
- ELLIS Z H Nonoperative Treatment of Cataract with a Report on Lens Antigen Treatment 358
- SOWLES A Retinitis Punctata Albescens 359
- JONES L W Retinitis with Massive Exudates 359
- IVERTSON J A The Etiology Diagnosis and Prognosis of Optic Neuritis 359
- ROVNE H The Nomenclature of Optic Neuritis 359
- BALLANTYNE A J Optic Neuritis as an Aid to Diagnosis 359

Ear

- FRASER J S A National Investigation of Otosclerosis 361
- LILLIE H I General Sections of Otitic Ossification Treatment by Blood Transfusion and Ceric Sulphate 361

Nose and Sinuses

- HEMPSTEAD B F Intranasal Surgical Treatment of Chronic Maxillary Sinusitis 361

Mouth

- JUDD E S and NEW G B Surgery in Cases of Intra Oral Cancer 362

Pharynx

- BRENNEMANN J Abdominal Pain of Throat Infections in Children and Appendicitis 387

Neck

- VAN DEN WILDENBERG L Deep Actinomycosis of the Neck and Mediastinum 36
- SISTRUNK W E The Technique of the Removal of Cysts and Sinuses of the Thyroglossal Duct 363
- HERTZLER A E The Pathogenesis of Goiter Considered as One Continuous Disease Process 363
- SAGER W W Exophthalmic Goiter Pathological Change as a Result of the Administration of Iodine (Lugol's Solution) 363
- BOWING H H Malignant Tumors of the Thyroid Gland Treated by Operation Radium and the Roentgen Rays 364

SURGERY OF THE NERVOUS SYSTEM

Brain and Its Coverings Cranial Nerves

- LILLIE W I Ocular Phenomena Produced by Basal Lesions of the Frontal Lobe 365
- SHARPE W Observations Regarding Ventricular Punctures 365
- GOETTE K Roentgenological Visualization of the Cerebellum 365
- MOERSCH F P Tumors of the Brain and Syphilis 365
- CRAIG W McK Malignant Intracranial Endotheliomata 366
- ELSGER C A The Dura Mater in Cranial Decompressive Operations 366

Spinal Cord and Its Coverings

- ROBINEAU and BANZET Section of the Anterolateral Tract of the Spinal Cord Chordotomy Operative Technique 366

- THOMPSON W and STEWART M J A Remarkable Example of the Tendency toward Recurrent Teptic Ulceration Following Gastro Enterostomy for Duodenal Ulcer 385
- WALTERS W and BOLLMAN J L The Toxemia of Duodenal Fistula Physiological Changes Concerned in the Production of Its Characteristic Chemical Reactions of the Blood 386
- DRAPER J W and JOHNSON R K The Pathogenic Colon—Recent Studies 386
- BARGEN J A The Treatment of Chronic Ulcerative Colitis 386
- CARAVEN and BASSET Strictly Mechanical Obstruction of the Intestine without Abscess or Peritonitis in the Course of an Initial Attack of Appendicitis 387
- BRENNEMANN J Abdominal Pain of Throat Infections in Children and Appendicitis 387
- Liver Gall Bladder Pancreas and Spleen**
- MCINDOE A H and COUNSELLER A S The Bilaterality of the Liver 387
- SNELL A M and ROWNTREE L C The Functions of the Liver and Tests of Their Efficacy 387
- GRIMMALT L and BASSET A A Case of Traumatic Rupture of the Liver Early Operation Excision and Suture of the Hepatic Laceration Cure 388
- SNEEL A M and WEIR J F Diseases of the Liver and Bile Passages 388
- MCNICOLL C S and FITTS W T Clinical Aspects of Jaundice 388
- HEAD C G Acute Hepatic Degeneration—Cholecystoastromy 389
- JUDD E S and COUNSELLER A S The Effects of Obstructive Lesions of the Common Duct of the Liver 390
- BOYDEN F A Concern the Prevalent Denial of Functions Inherent Attributed to the Gall Bladder 390
- DICK B M and WALLACE A G H Cholecystography Toxic Effect of the Dyes 391
- KIRKLEIN B R CAYLOR H D and BOLLMAN J L The Concentration of Cholecystographic Media and Bilirubin by the Gall Bladder 391
- WILKIE A L The Bacteriology of Cholecystitis a Clinical and Experimental Study 391
- WANGENSTEIN O H Cholangitis Following Cholecystenterostomy 392
- CIFFIN H Splenectomy 392
- Miscellaneous**
- SMITH P The Relation of the Surgical Pathology of the Right Lower Quadrant to Arthritis 411
- TAYLOR K G Surgical Lesions of the Right Lower Quadrant Demonstrated in Patients with Chronic Deforming Arthritis by X-Ray Opaque Meal Examinations 411
- GYNECOLOGY**
- Uterus**
- MIRFIS F M Electrodathermy—Its Use in the Treatment of Benign and Malignant Lesions of the Uterine Cervix 393
- PALMER A C The Age Incidence of Carcinoma Corporis Uteri 393
- FLUHMANN C F Epidermalization of the Cervix Uteri and Its Relation to Malignancy 393
- DUSTIN A P A New Contribution to the Study of the Radiobiology of Carcinoma of the Cervix Submitted to Radium Therapy at a Distance 393
- POLAK J O The Present Status of Therapy of Cancer of the Uterus 394
- PETIT R Vaginal Hysterectomy Technique and Indications 3 Consecutive Cases without Complications 395
- Adnexal and Peritoneal Conditions**
- FAIRBAIRN J S and SIMS T H Pseudomyxoma Peritonei Associated with Ruptured Ovarian Cyst and Appendicular Disease 379
- RUBIN I C Observations on the Intramural and Isthmic Portion of the Fallopian Tubes with Special Reference to So Called Isthmospasm Based on Clinical X-Ray Lipiodol Study and Uterotubal Infundibulation in Fifty Cases of Tubal Occlusion 396
- DIXON W F and OTHER Discussion on the Action and Uses of Ovarian Extracts 396
- HUNT A C and SIMON H I Carcinoma of the Ovary in Infancy 397
- Miscellaneous**
- MEAKER S R A Working Classification of the Causes of Sterility 397
- JOHNS A A Cystography as an Aid to the Diagnosis of Pelvic Lesions in the Female 397
- SCHLICK H H Pelvic Lymphangitis or the Role of the Lymphatics in Pelvic Inflammation 398
- BARTHELEMY Fibrous Pelvic Peritonitis 398
- OBSTETRICS**
- Pregnancy and Its Complications**
- KADJAR M K The Study of the Placental Circulation in Multiple Pregnancies by the Stereocorontographic Method 399
- WALKER A A Case of Rupture of the Uterus After a Previous Cesarean Section 399
- DOUGAL D The Clinical Features of Ectopic Pregnancy 399
- LACOUTURE J and MASSÉ L A Child Two and One Half Years Old Born of an Ectopic Pregnancy 399
- WALKER A Diabetes Mellitus and Pregnancy 399
- Labor and Its Complications**
- BAILEY H and WILLIAMSON H C Trial Labor as a Procedure in the Treatment of Patients with Contracted Pelvis 399
- MAXWELL A I A Study of Labor in Contracted Pelvis 399
- HUNTINGTON J L IRVING J C and KELLOGG F S Abdominal Reposition in Acute Inversion of the Puerperal Uterus 401

- COTTON F J The Technique in the Use of Grafts in Cases of Non Union 420
- MILCH H Dislocation of the Head of the Radius A Suggestion for a New Operative Procedure 420
- PUTTI V Early Treatment of Congenital Dislocation of the Hip 420
- MOORE G A A Flexed Plaster Spica Case for Hip Fractures 420
- FINZI O Isolated Fracture of the Lesser Trochanter 420
- LOEBERG O The Treatment of Fractures of the Neck of the Femur 389 Cases on the Surgical Service of the Municipal Hospital of Malmö 411
- ALBER F H Late End Results in Ununited Fracture of the Neck of the Femur Treated by the Bone Peg or the Reconstruction Operation 421
- LEHMAN C P and ESKELDES I H Fracture of the Tarsal Scaphoid with Notes on the Mechanism Involved 422
- WILSON P D The Treatment of Fractures of the Os Calcii by Arthrodesis of the Subastralar Joint A Report on Twenty Six Cases 422
- STEPHENS V P Acute Intussusception Manipulative Reduction under Fluoroscopic Control 384
- DICK B M and WALLACE G H Cholecystography To illustrate Effects of the Dyes A Clinical and Experimental Study 391
- KIRKLIN B P CAYLOR H D and BOLLMAN J L The Concentration of Cholecystographic Media and Bilirubin by the Gall Bladder 39
- LEVIN I C Observations on the Intramural and Isthmic Portion of the Fallopian Tubes with Special Reference to So Called Isthmospasm Based on Clinical X Ray Iridiodol Study and Uterotubal Insufflation in Fifty Cases of Tubal Occlusion 406
- ROBINS S A Cystography as an Aid to the Diagnosis of Pelvic Lesions in the Female 397
- KADJAR M K The Study of the Placental Circulation in Multiple Pregnancies by the Stereocentographic Method 399
- MEFZ H Postnephrectomy Measurement of the Compensatory Hypertrophy of the Kidney Remnant after Nephrectomy 403
- HAGGER B H and BRAUSCH W F Cystography 406
- PICK I The Anatomico-Roentgenological Differential Diagnosis of Syphilis and Iliac Dys trophy of the Long Bones 410
- CAYLOR P G Surgical Lesions of the Right Lower Quadrant Demonstrated in Patients with Chronic Deformity of the Hip by X Ray Opaque Meal Examination 411

SURGERY OF BLOOD AND LYMPH SYSTEMS

Blood Transfusion

- COHEN M KILLIAN J A and KAMNER M Comparative Chemical Studies of the Ocular Fluids of the Cerebrospinal Fluid and of the Blood 357
- WALTERS W and BOLLMAN J I The Toxicity of Duodenal Fistula Physiologic Changes Concerned in the Production of Its Characteristic Chemical Reactions of the Blood 386

Lymph Vessels and Glands

- SCHLICK H H Pelvic Lymphangitis or the Role of the Lymphatics in Pelvic Inflammation 398

PHYSICO-CHEMICAL METHODS IN SURGERY

Roentgenology

- BOWING H H Malignant Tumors of the Thyroid Gland Treated by Operation Radium and the Roentgen Rays 364
- GOETTE K Roentgenological Visualization of the Cerebellum 365
- KIRKLIN B R and PATERSON R The Roentgenological Manifestations of Primary Carcinoma of the Lung 375
- HOLMES G W and DRESSER P The Use of Amyl Nitrite as an Antispasmodic in the Roentgen Examination of the Gastrointestinal Tract 380
- CASE J T and BOLDYREFF W N The Influence of the Roentgen Rays upon Gastric Secretion 380

Radium

- BOWING H H Malignant Tumors of the Thyroid Gland Treated by Operation Radium and the Roentgen Rays 364
- DUSTIN A I A New Contribution to the Study of the Radiobiology of Carcinoma of the Cervix Submitted to Radium Therapy at a Distance 393
- POLAK J O The Present Status of Therapy of Cancer of the Uterus 394
- INGEBRIGTSEN R Cancer of the Bladder Treated with Radium Cure of Seven Years Duration 407

Miscellaneous

- MORGAN O G and HOWITT F D The Application of Heat by Diathermy in Idiocyctitis 358
- ANDERSON J Surgical Diathermy in Breast Cancer The Application of the Arc Electrode or Cutting Current to the Radical Operation 371
- MIKELS F M Electrodiathermy—Its Use in the Treatment of Benign and Malignant Lesions of the Uterine Cervix 393
- BEER L The Treatment of Tumors of the Bladder with Physical Agents 406
- ROLLIER A Heliotherapy in Hip Joint Tuberculosis 413

EDITOR'S COMMENT

CHRISTOPHER'S critical review of the literature of the first five years on the treatment of furuncles and carbuncles (p. 345) deserves careful reading. As one observes the trends in surgical teaching and practice today, he cannot help but be impressed with the relatively scant attention that is being paid in medical school and hospital to the correct and efficient treatment of infections as compared with the emphasis that is being laid upon the so-called major surgical diseases. Frequently the graduating student and the hospital resident have definite and sound conceptions of the surgical management of a case of thyroid intoxication but very hazy ideas of basic principles involved in the treatment of an infected wound and of the most effective method of applying those principles. If then the instructor and the attending surgeon show little interest in the subject or assume that the student is already well versed in it, the young surgeon may fail entirely to gain a comprehensive knowledge of the most effective methods of treating the very cases he is most likely to encounter during his early years of practice. Christopher's review emphasizes again the principles involved in the surgical treatment of a type of infection which is both common and not infrequently difficult to manage and which for both reasons deserves careful consideration.

When one has listened with complacent ears to the oft repeated assertion that the leadership in modern medicine and surgery has passed from the old world to the new, it is with unpleasant feelings of surprise that he reads that the maternal mortality rate in the United States is one third higher than the maternal mortality rate in England and Wales and more than twice as high as that of Denmark, Italy, Japan, the Netherlands, New Zealand and Sweden (Baker, p. 40). In 1915 the mortality was 6.1 and in 1915-6, 6.4 per 1,000 births. In Canada in the year from July 1, 1915 to July 1, 1926 it was 6 per 1,000 births (MacMurchy, p. 40). In Norway in the period from 1900 to 1918 the average puerperal death rate was 2.95 per 1,000 births (Kosmak, *J. Am. M. Ass.* 19, LXXIX, 209). INTERNATIONAL ABST. OF SURG. 1928 (LVI, 299) and 85 per cent of the deliveries are done by midwives.

Of particular significance is the statement of Baker that 40 per cent of the maternal deaths in the United States are due to puerperal infection and 10 per cent to instrumental deliveries and surgical procedures such as cesarean section. In other words, one of every two deaths results from infection or operative delivery. In discussing the possible remedies for this situation, Kosmak has made a number of helpful suggestions that deserve the thoughtful consideration not only of specialists in the field of obstetrics but of every member of the medical profession.

The constantly increasing interest that is being manifested in the subject of thoracic surgery, the widening indications for surgical treatment in the presence of intrapulmonary suppuration and the constantly improved results that are being obtained through the co-operation of workers in many different fields—experimental surgery, radiology, bronchoscopy, bacteriology and pathology—have been frequently emphasized in these pages. The experimental studies of Crowe and Scarff (p. 2) and of Allen (p. 37) supplement the work of Schlueter and Weidlein and of Ochsner and others on the pathogenesis and experimental production of lung abscess. The reports of Whittmore and Balboni (p. 73) and of Rogers and Kernan (p. 373) on the results of artificial pneumothorax in abscess and bronchiectasis and Archibald's discussion on the surgical treatment of pulmonary tuberculosis (p. 374) are other helpful contributions to the subject of thoracic surgery.

Balfour's papers on the surgery of the stomach and duodenum (p. 38) and Hunt's resume of the critical factors involved in the successful management of prostatic obstruction and of the results obtained in a large series of cases at the Mayo Clinic (p. 407) Boylen's experimental studies of gall bladder function (p. 390) Mosher's report of the results of examination with the barium bougie in cases of cardiospasm (p. 377) and Kraske's recommendation of the principle of elastic tension in the treatment of club foot (p. 416) are a few of numerous other interesting and helpful contributions which are abstracted in this month's issue of the INTERNATIONAL ABSTRACT OF SURGERY.

INTERNATIONAL ABSTRACT OF SURGERY

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COLLECTIVE REVIEW

THE TREATMENT OF FURUNCLES AND CARBUNCLES

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A SURVEY of the literature of the last five years which deals with the treatment of furuncles and carbuncles discloses a multiplicity of methods of treatment which reflects dissatisfaction with the usual methods and an active search for better ways. An appraisal of any system of treatment of carbuncles and furuncles is very difficult. Frequently several therapeutic measures are used simultaneously. There are considerable dissimilarities in the furuncles and carbuncles themselves. A writer may claim very favorable results from a method but is unable to furnish other control except what he *believed* the infection would have done without his treatment. The last remedy employed is often given credit which really was due the defensive forces of the body.

Several criteria are employed in the estimation of the value of a treatment. The criteria from the patient's standpoint named in decreasing order of their importance are: (1) the amount of pain; (2) the extent of the interference of the treatment with the patient's work; (3) the degree of inconvenience caused by the dressings; (4) the length of time required for recovery; (5) the size of the scar; (6) the need for a general anæsthetic; and (7) the expense of the treatment. From the doctor's standpoint must be considered: (1) the amount of skill required; (2) the practicability of the treatment for practitioners with limited facilities; and (3) the practicability of the treatment in large hospitals where every facility is available (13).

The furuncle is the site of a conflict between the invading staphylococcus and the natural

defensive forces of the body. There is no fundamental difference between a boil and a carbuncle. The difference is due solely to anatomical and mechanical factors. The carbuncles differ because of the tough skin connected to the underlying fascia by strong vertical septa (81). Theoretically therapy has but two objects—to destroy or weaken the staphylococcus and to augment the protective mechanisms of the body. Practically, however, it is necessary to consider in the treatment the assuaging of pain and the general convenience of the patient. The infecting organism comes from without and passes through a portal of entry in the skin generally a hair follicle and the reaction to its invasion depends upon the virulence of the particular strain of bacteria, the state of the defensive forces of the host and the anatomical peculiarities of the site invaded. Furunculosis is a syndrome with very variable accompanying etiological factors (105). Why does a saprophytic organism suddenly become virulent? is asked.

There are all gradations between pimples and malignant carbuncles. The reaction of the tissues to the staphylococcus is either suppuration or necrosis (107). The core or slough is composed of dead tissue and dead cells. The early prognosis of a furuncle according to Schutz (114) depends upon: (1) the area of infiltration; (2) the intensity of the pain; and (3) the amount of systemic disturbance. Severe pain is not however a marked symptom of many very serious carbuncles of the neck. The situation of the furuncle is an important factor in its seriousness. As is well

known furuncles of the face and particularly those of the upper lip have a high mortality (18).

Hinton (49) has made very clear the anatomical proximity and relations of the anterior facial vein and its branches to the cavernous sinus. From the facial vein blood and organisms may pass by way of the inferior ophthalmic vein and the angular and superior ophthalmic veins by a sort of retrograde thrombosis. The mortality of furuncles of the face has been variously estimated. Of 103 cases of furunculosis in the period from 1911 to 1937 10 per cent were fatal (91). Moisan (50) believes that persons with malignant furuncles, with sepsis from the start, are doomed no matter what treatment is given. Dittrich (21) stresses fever as an important sign of a tendency toward malignant furuncle of the face. Dittrich had thirty-one cases of furuncle of the face. Ninety-five per cent were on the upper lip and in this group the mortality was 10 per cent. According to Hofman (53) the mortality in 82 cases of furuncle of the face at Bier's clinic was 8.2 per cent. In one third of the fatal cases the furuncle was on the upper lip. By some the mortality of lip furuncles is believed to be considerably higher.

Calts (9) recent case is illustrative of the danger of tetanization in furuncles of the upper lip. A boy of seventeen years picked a small pustule of the upper lip. The next day a small incision was made. Tremendous swelling then developed and the patient became stuporous. The white blood count varied between 23,000 and 150,000 and when the patient died six days later there was pus in the cavernous sinuses. In Combs (15) case the patient picked and squeezed a furuncle of the anterior nares and death ensued three or four days later. Turner and Reynolds (118) report one death in sixty-three cases of furuncle of the nasal vestibule, a mortality of 1.6 per cent. In the fatal case a small boil appeared upon the inner aspect of the right ala nasi. Two days later it burst with a free discharge of pus. On the following day healing commenced and protrusion of the eyelid cured. Death resulted six days after the onset.

Kauffman (6) found the mortality of furuncle metastases to be about one per cent, considerably lower than the estimate of 5 per cent. The *locus minoris resistentiae* marking the metastasis was generally the site of a hemorrhage and the prognosis as most serious in the cases in which the inner organs were involved.

Although accurate classification is impossible the treatment of furuncles and carbuncles may be considered under the following heads:

I Prophylactic treatment

II Local treatment

A Mechanical

- 1 Incision by knife including excision
- 2 Incision by cautery including excision
- 3 Ignipuncture (glow needle)
- 4 Sounding and dilatation
- 5 Phenol probe
- 6 Best avoidance of trauma

B Chemical

- 1 Cataplasma and softening poultices
 - a Unguents
 - b Iodine
 - c Pancreatic ferments
- Hypertonic solutions
 - a Saturated boric acid solution
 - b Aluminum acetate
- 3 Antiseptic plasters and applications
 - a Idenol
 - b Iodine
 - c Icthyol

C Heat

- 1 Hot fomentations
- 2 Dry heat

D Irradiation diathermy, etc.

- 1 X-ray
- 2 Ultraviolet light
- 3 Diathermy

E Biological

- 1 Autoblood circuminjections
- 2 Vacuum cupping
- 3 Bier's hyperæmia
- 4 Horse serum
- 5 Histoplast

III Systemic treatment

A Biological

- 1 Vaccines
- Insulin
- Blood
- 4 Non-specific protein therapy

B Pharmaceutical

- 1 Sulphur
- 2 Iodine
- 3 Manganese
- 4 Quinine
- 5 Mercury
- 6 Mercurochrome
- 7 Turpentine

C Dietetic measure, laxatives, fluid rest

IV Anesthesia in furuncles and carbuncles

I PROPHYLACTIC TREATMENT

In his interesting review of the treatment of furuncles Lotsch (63) considers prophylaxis first. Under this heading may be mentioned first strict bodily cleanliness. More specifically where pus has come in contact with the skin as in the neighborhood of a discharging furuncle the skin must be scrupulously cleansed preferably with soap and water and washed with alcohol. All epithelial defects or abrasions must be avoided. Shaving with a dull razor traumatizes the hair root follicles. Men whose stiff collars cause skin friction are much more susceptible to furuncles of the neck than women who wear soft low collars. All abrasions and small wounds should be treated with antiseptics. Caution must be observed in the use of adhesive to fasten dressings to discharging wounds since furuncles may develop beneath it. As will appear later dietary precautions particularly those which may cause a lowering of the blood sugar may be of value. Treatment with the roentgen ray and with autogenous and polyvalent vaccines may be included under the head of prophylactic treatment but will be given more detailed consideration later.

II LOCAL TREATMENT

Opinion is divided as to the wisdom of incising furuncles and carbuncles. Lee and Downs (81) believe that there are two indications in the treatment of all pyogenic infections - the relief of tension and the removal of dead tissue. The situation of the lesion is of course of importance. Livingston (86) has made a careful study of carbuncles. In the last 30,000 surgical cases admitted to Bellevue Hospital New York there were 160 cases of carbuncle of the back of the neck. Livingston advises immediate excision of the necrotic tissue by a double crucial incision. He undercuts the lateral flaps in such a manner that they may be approximated by adhesive plaster as granulation progresses to bridge over the skin defect. Excision of a carbuncle or anthrax lesion is advised by Goldschmidt (36). Hrynschak (55) agrees to conservative measures only at the very beginning or the ending of a carbuncle of the back of the neck and advocates radical surgery when the lesion is at its height. Franke (27) incises early and cures. Lee and Downs (80-81), Edmunds (3) and Achausen (1) consider it important to make undercutting incisions parallel with the skin surface so that all the diseased fat columns may be opened. Drainage of the wound with secondary suture is employed by some surgeons (81).

Objections to the incision of a furuncle or carbuncle include the associated pain, the possibility of opening new channels of infection, the slow healing, the use of a general anesthetic and the disfiguring scar (87). Junkermin (61) employs conservative measures. He regards surgery in carbuncles and furuncles as criminal except in cases with fluctuation. Hasty incision is warned against by Pulay (101). Moran (91) states that in furuncles of the face incision gives no better results than conservative treatment and has the disadvantage of leaving a scar. Friedemann (3) emphasizes conservative treatment. In furuncles of the upper lip the evidence is unfavorable to incision. Dittich (21) found that in twenty-two of forty cases of furuncle of the upper lip which were treated by incision the mortality was 13.6 per cent whereas in eighteen cases in which incision was not done the mortality was only 5.5 per cent. Melchior (90) collected twenty-three cases of face furuncles at the Breslau clinic. In the thirty-seven cases treated by incision there were four deaths and in the thirty-six cases treated conservatively there was but one death. Melchior believes however that incision was done in the more serious cases. He is inclined to the opinion that if the process is progressive suitable incision is the surest procedure to prevent further propagation.

As is well known the chief danger in furuncles of the face is cavernous sinus thrombosis and infection by way of the facial vein (Hinton 49). Traumatism is believed to increase the risk of thrombophlebitis with the meningeal sequelae. Hofman (53) emphasizes the danger of picking and squeezing. Even the use of a sharp knife may aggravate the condition. One is somewhat reluctant to endorse the method of Gallemarts (35) who treats early and radically every furuncle of the face with the galvanocautery. Schule (11) does a central cauterization of furuncles and inserts a cotton drum. Jopson (60) uses the cautery for ordinary carbuncles but does not do a complete excision on the face.

In 1919 first Kritzler (71) and then Schule (111) advocated central cauterization of furuncles with a glowing hot needle (ignipuncture). Koch (70) describes this method as painful but astonishingly valuable. After cleansing of the skin a glowing hot knitting needle is inserted from 6 to 10 mm into the crater of the furuncle. This is believed to destroy the first focus of infection. Without squeezing a gauze dressing is applied. Schutz's (113) method consists in sounding and dilating the carbuncle orifices and applying hot compresses. Braun (6) praises the Schutz

A method of aborting very early furuncles which is often successful consists in painting the small red indurated painful area with full strength tincture of iodine. Three or four coats may often be used to advantage the tincture being allowed to dry between applications (97) Wolfer (13) treats the earliest suggestion of a pyogenic cutaneous infection by anesthetizing the skin with carbolic acid in a very small cross and making in this carbolic cross a very shallow short crucial incision. The use of ichthyol was first advocated by Unna and has many proponents. Kissmeyer's (64-65) technique is as follows. Each furuncle is first cleaned with alcohol or iodine and dried and then covered with pure ichthyol. Over the thick oil of the ichthyol which soon dries a thin layer of cotton is applied. The little dressing sticks like collodion. The next day the dressing is removed with tepid water and the treatment is repeated. In some cases the dressing is changed twice a day. In cases of large furuncles Kissmeyer uses the galvanocautery and ichthyol.

Grosschopff (40-41) has used an alcoholic solution of salicylic acid (Salicylspiritus) to paint furuncles. Analgit a solution of isothionallyl has been recommended by Brumer (5) for the treatment of furuncles. In 1905 de Takats (20) reported thirty one cases of localized pyogenic abscesses in which aspiration was done through a needle placed to 3 cm from the border and a solution of rivanol was injected. Sterilization occurred in twenty six cases (85 per cent). After sterilization two small stab wounds were made and through them the necrotic contents were expressed. Although rivanol is supposed to be non toxic and non caustic some surgeons do not favor its use. Deep injections of phenol have gained but few adherents.

One of the chief agents in our present treatment of furuncles is heat particularly in the form of hot fomentations. It is important to give the nurse or attendant explicit directions as to the manner of applying the fomentations. The first requirement is that the dressings be massive so that an area considerably beyond the infected area will be treated. The second requirement is that the dressings be continuously warm and moist. A most convenient procedure consists in applying dressings wrung out of whatever hot solution is employed covering the dressings with a rubber sheet or oil cloth and fastening an electric pad on top of all. By this method a continuous moist heat is produced and the solution may be added at the corner of the dressing as needed. As a substitute for the electric pad a hot water bag

or frequent changes of the hot dressings may be used. Heat is greatly appreciated by the patient as a rule. In the treatment of carbuncles Livingston (86) uses dry heat after the first twenty four hours.

Potter (100) believes that the X ray is useful in the treatment of furuncles in a three fold way: first in the form of a localized erythema dose to abort incipient boils; second in the form of local treatment to hasten the healing and to make well developed furuncles less painful; and third in the form of a wide light exposure to act as a preventive and prophylactic. Hodges (5) states that the roentgen ray acts almost as a specific in the majority of carbuncles. He adds however that the early deep types of carbuncles are probably treated most effectively by complete surgical excision.

Similarly Berndt () who reported four cases of successful X ray irradiation of furuncles of the face is of the opinion that thorough excision of the infected area is the proper procedure in carbuncles of the neck and back. In 1911 interest was attracted to the use of the X ray in furunculosis by Heidenhain (45) who recommended roentgen irradiation in resistant cases of axillary furunculosis. Heidenhain used barely one third of the ordinary erythema dose with a 3 mm aluminum filter and a large field. Lotsch (87) believes that the X ray is of value for early furuncles but does not influence the late ones. Lewis (84) reported sixteen cases of carbuncles treated with the X ray and believes that roentgen irradiation exerts a powerful influence on the progress of the carbuncle. While operation is unavoidable in a few cases Lewis claims that the X ray brings a speedier cure than surgery in the majority of cases.

Little has been written about the use of diathermy in furunculosis. Hunter (58) however has employed this method with success in the treatment of furuncles of the ear. Wilmoth (12) warmly recommends electrocoagulation in carbuncles believing it to have rendered obsolete the treatment of these lesions with the knife and cautery. He makes repeated hot punctures in the infected area and then cures out the coagulated tissue. Dittrich (21) has had good results from electrocoagulation with fine needles.

Ionization or cataphoresis has been tried. Norrie (94) employed this method in furunculosis of the external auditory canal using a per cent salicylate or soda packing. Laquerne (70) dipped the negative electrode in potassium iodide and placed it over the boil. This may have brought about an ionization of iodine.

Ultraviolet light has been tried in furunculosis. Treatment of the crater bed of an excised carbuncle with the water cooled ultraviolet lamp has a germicidal effect on the superficial organisms. The amount of penetrating effect is difficult to estimate. It is not unlikely that generalized ultraviolet radiations have a beneficial effect in raising the body's resistance to infection.

Following four fatal cases of carbuncles in which extensive incision had been done, Laewen (75) in 1933 began to use injections of the patient's own blood. The whole blood was injected at the margins of induration in furuncles after simple crucial incisions. The results were favorable. In the same year Laewen (5) described a case of fulminating furuncle of the upper lip in which after crucial incision 90 c cm of the patient's unmodified blood was injected just beyond the area of cellulitis. The next day the infiltration and induration were found to be merged. On the third day the temperature and swelling were down. On the sixth day the induration had spread to the other side of the face. Sixty-five cubic centimeters of the patient's blood was then injected as previously. On the ninth day the process had stopped (Carp). In 1934 and in 1936 Laewen (7, 8) again urged this method for furuncles of the face and neck.

The autogenous blood is injected into the healthy skin at the infiltrated border and a general surgical opinion is made after the injection. Some doubt is thrown upon the necessity of using blood for circuminjection by the work of Hilckel and Thomann (48). These investigators found that in rats and mice an efflux blocking of injected tubercine could be obtained by making an aureole wall of blood. Human blood is in a better solution. Liner's solution of tilled water diptheria antitoxin or a silver salt. Linhart (55) found Laewen's method successful in several cases of malignant furuncle of the face. From 40 to 80 cubic centimeters of blood was injected in a circle around the area of the infection. The method is referred to also by Schlesinger (109), Schirak (108) and Hinze (50). Hinze successfully treated three cases of carbuncle of the upper lip in this manner. In 1937 he (51) published photographs of a very severe case of carbuncle of the upper lip in which he blocked the area of infection by injecting first 80 c cm and two days later 120 c cm of autogenous blood.

In contradistinction to Laewen's autogenous blood injections with surgical incisions in carbuncles, Carp (1) made an extremely carefully of injections of autogenous blood without

surgical incisions. He treated twelve definite progressive carbuncles in non diabetic subjects by the circuminjection of autogenous blood without accessory measures such as incision, local heat or narcotics. He used a general anesthetic and a sterile needle for each of the three to six intracutaneous and subcutaneous circuminjections. The amount of blood varied from 10 to 70 c cm and averaged 37 c cm. Carp noted that (1) the infection did not spread except in one case, (2) there was quick relief of the pain and constitutional symptoms, (3) there was no apparent reaction after the injection, (4) most of the slough liquefied, (5) the injected blood seemed to remain in the tissues undergoing gradual modification for from several days to two weeks, (6) the time for cure was probably shorter than it would have been if a surgical procedure had been used, (7) the patients showed a minimal scar at the time of discharge from the hospital, and (8) the average time for cure was twenty-three days.

The objection has been raised to this method that the injection of blood might spread infection exactly in the same way as a local anesthetic (Carp). This apparently occurred in one of Carp's cases but the spread subsided without surgery on the addition to the treatment of rest, flaxseed poultices, and roentgen ray irradiation. As a rule, the injected blood seems to prevent the spread of infection. In answer to the objection that the injected blood may become infected, Carp quotes Laewen (75) as stating that the injection of blood builds a wall against the spread of bacteria while coagulation (with hematoma) prevents away for the dissemination of the microorganisms.

A variation of the autogenous blood treatment of Laewen is that of Kuhn (73, 4). Kuhn believes that Laewen's injections influence the area around the furuncle more than the furuncle itself. In order to distribute the blood more evenly, Kuhn uses a vacuum cup with suction strong enough to produce hemorrhages in and around the furuncle. Narcosis is often necessary in his method. Beginning with a negative pressure of from 100 to 200 mm Hg, the suction is increased to from 400 to 600 mm Hg. The suction cup is left on for from one half hour to four hours. Kuhn has discontinued the incision of furuncles less than 7 to 8 cm in diameter. Duker (22) has had good results from Kuhn's method. He has used a vacuum as high as 1 atmosphere. Because of pain the vacuum must not be applied too rapidly. Hemorrhages are caused in and around the furuncle. Hans (43) has

warned against maltreatment of furuncles with suction apparatus. Rieder (104) formerly was accustomed to inject 1 or 2 cm of the patient's own blood into the center of a furuncle but now uses ordinary horse serum. After a wide surgical opening he tampons the wound with diphtheria antitoxin. In small furuncles 1 cm of horse serum is placed in the center of the infection.

In 1923, Friedemann (31) recommended Bier's hyperæmia in malignant furuncles of the face. For the induction of the hyperæmia a constricting band is placed around the neck for twenty-two hours daily. Of Friedemann's twenty-four cases in which this method was used eighteen were without sepsis and showed rapid healing. Of the six cases with grave sepsis recovery resulted in three. According to Kuhn (73) the back pressure in Bier's hyperæmia is only from 50 to 100 mm Hg.

Following a series of experiments on himself in 1921 von Wasserman (119) announced histoplast, a preparation containing an extract of the live staphylococcus. This is applied locally to the furuncle. The inflamed focus absorbs the staphylococcus antigen and after a fifteen to thirty minute reaction there is a diminution of the pain. Hofmann (34) used histoplast on seventeen cases and found it to exert a favorable influence upon early furuncles. Stalfeld (106) and Kleeberg (66) also recommended histoplast. Stajano and Hormeche (116) apply to furuncles a gauze dressing impregnated with an antistaphylococcus vaccine with a concentration of about 10,000 million per cubic centimeter which is made from cultures of staphylococcus aureus taken from furuncle pus. They claim that the use of this vaccine results in abortion of the infection in many cases and in suppuration and resolution within twenty-four hours in others. Wegand (11) describes a salve called staphimun which he rubs into furuncles to cause Simultan Immunisierung. Chesbrough (38) uses cuticleogen guttuplast on water-proof gutta percha together with internal injections of staphylococcus vaccine.

Vaccines have long been employed in the treatment of furunculosis. They are of the autogenous and polyvalent varieties. The autogenous vaccines are prepared from cultures made from the patient's furuncle and are useful in about 50 per cent of the cases to prevent the development of other boils. Gruca (42) has had a very favorable experience in 120 cases with the vaccine treatment combined with opsonogen. In severe cases such as orbital furuncles and furuncles of the upper lip he used 500 million staphy-

lococci the first day, 750 million the second, 1,000 million the third, and 1,000 million the fourth.

A hopeful aspect of furunculosis is the possible relation of the condition to an excess of carbohydrates. The severity of furunculosis in the presence of diabetes is well known but even when the urine is sugar free it is possible that a high normal blood sugar may increase the liability to furunculosis. On the basis of self experience Pfahler (97) immediately reduces the carbohydrate diet to a minimum on the appearance of a boil. Bieber (3) who investigated the blood sugar in furunculosis has used two units of insulin daily for four days and says that in four days the furuncles disappeared. Stormer (117) reports good results in furunculosis from the use of twenty to eighty units of insulin daily.

Pivant and Huguenin (102) report a case of recurring furunculosis which was completely cured by increasing injections of first autogenous and then heterogenous blood. Lotsch (87) mentions the injection of autogenous blood in the thigh. The ingestion of beer yeast was thought to exert a favorable influence on furuncles but this method of treatment has fallen into disfavor.

In 1923 Bier (4) reported the successful treatment of twenty-eight out of thirty-five cases of furunculosis by homeopathic doses of sulphur administered internally. He recommended one tablet containing 0.1 mgm of sulphur iodide three times daily, one-half hour before meals. According to Zieler (16) Bier's method has a favorable influence on furuncles and abscesses of sweat glands. Zieler uses 0.1 mgm of sulphur iodide (sulfjodat) which is made by mixing together sulphur iodide D3 0.1 mgm and sulphur iodide D6 0.0001 mgm. Heinemann (46) reports successful experience with the Schwabe sulphur iodide D3 tablets.

Heulten (47) has found homeopathic doses of sulphur useful in furunculosis of the external auditory meatus. Freeman (9) advises $\frac{1}{6}$ gr of calcium sulphide three times daily.

Oliver (93) gives one capsule containing $\frac{1}{2}$ gr of bisulphate of quinine three times daily for two days and then two capsules for two days, three capsules for two days, four capsules for two days and finally five and six capsules each for two days.

Of considerable interest is the treatment of staphylococcus infections with tin and its compounds. Tin was first recommended in 1917 by Frouin and Gregoire (34) who had observed that the tin workers of Beauve, France, seldom suffer

from carbuncles and that tin powder is a popular remedy for the disease in that district. After various experiments they claimed that tin as chloride or its oxide when added to ordinary bouillon culture medium strongly inhibits the growth of the staphylococcus under anaerobic conditions, under aerobic conditions the growth of staphylococcus is not hindered, but the virulence of the organism is diminished. The intravenous injection of the chloride or hydroxide of tin into rabbits twelve hours after the intraperitoneal injection of the virulent staphylococcus retarded the death of the animals for several days. Frouin and Gregoire conclude (1) that metallic tin and tin oxide were absorbed by the digestive tract, (2) that tin was innocuous to the ingesting animal, (3) that tin had a beneficial effect on staphylococcus septicæmia and (4) that the bactericidal action of tin and its compounds justifies its use for patients with staphylococcus infections. More recently Rio (103) concluded after experiments that the action of tin, the protoxide of tin and the bisulphate (?) of tin on the staphylococcus *in vitro* is extremely powerful. Poliakov (99) investigated the ability of the blood to destroy bacteria following the administration of tin in the form of stannoxyl using the method of Wright. He found that at least in healthy persons stannoxyl causes no increase in the power of the blood to destroy bacteria.

Frouin (3) studied the effects of tin administration in animals. He found tin in the urine twenty-seven days after its administration by mouth had been stopped. His experiments apparently justify the use of stannoxyl in staphylococcus infections.

Gregoire and Frouin (37) produced stannoxyl a compound composed essentially of metallic tin and tin oxide. They state that they used it successfully in fifty cases of furunculosis and believe that it has a specific action upon the staphylococcus. Other clinical reports are not lacking. Hudelo (56) reported six cases of furunculosis cured by stannoxyl. In one of these a case of axillary adenitis vaccines had failed to cause improvement. Bruhl and Michaux (7) used for three years with favorable results intramuscular injections of colloidal tin. Phocas (68) reported that cases with suppurating wounds which gave staphylococci in cultures were made culturally negative by the administration of tin. Compton (16) successfully treated five cases of furunculosis, one case of acne and one case of infective dermatitis with stannoxyl. The dose of stannoxyl is 0.5 to 1 gm. (four to eight tablets) daily. Comp-

ton's patients took in all from 0 to 4 to 10 tablets Morland (92) after acquiring his third carbuncle took six tablets of stannoxyl. The infection began to diminish on the second day and the lesion disappeared without opening in ten days. Hudelo, Montlaur and Drouin (57) believed that the tin should be in a lipid medium in this form it seemed to be a specific against furunculosis. In 1925 Poliakov (99) reported in detail five cases of furuncles treated successfully with stannoxyl. Levy (83) praised the action of tin in the form of hordeolum. In the cases of forty children under twelve years of age who were suffering from hordeolum he gave from one half to one tablet two to three times daily by mouth.

The use of manganese in infections has attracted considerable attention in the British literature. Manganese is not bactericidal *in vitro* (Martindale 89) and its beneficial action is thought to be a vital one as it is believed to act as an oxidizing catalyst or oxidase. Watson Williams (120) used manganese in the form of one per mill colloidal suspension and in a dose of 0.5 to 5 ccm. He reported nine cases to show that manganese powerfully increases the resistance of the tissues to antrax as to any other local infections. In 1919 McDonald obtained excellent results from injections of manganese butyrate in the treatment of whitlow, septic perforating ulcer of the foot, double quinsy, vaccination erysipelas and multiple mastitis. He praised its action in boils, carbuncles and gonococcal urethritis. Young (14) speaks of the dramatic results from intramuscular colloidal manganese injection and reports a case in which the colloidal manganese was administered by mouth. To an infant of eighteen months with boils he gave 4 minims of colloidal manganese in water three times daily by mouth after food. At the end of three days the development of boils was arrested but the dosage was increased to 5 minims three times a day for three days to 6 minims three times a day for three days and finally to 7 minims three times a day for three days.

Wilmoth (1) believes that 10 gr. of sodium citrate four times a day will liquefy the secretion.

Ferguson (6) is of the opinion that mercury stimulates the production of white blood cells. He reports about fifty cases of furunculosis benefited by from one to three injections of 1 gm. of mercury salicylate given intramuscularly. Harris (44) reports a case of nasal furuncle which had been incised with a resulting septicæmia. The condition was successfully treated by the injection of mercurochrome. Jarrell (9) had a case of

blood stream infection due to a carbuncle. Blood culture showed staphylococcus aureus. Two days after the intravenous injection of 15 c. cm. of 1 per cent mercurochrome the blood culture was negative. Nine days later pneumonia developed and again the blood culture was positive. Twenty cubic centimeters of 1 per cent mercurochrome were then given intravenously. Recovery followed.

Klingmueller (68) uses subcutaneous injections of olobutin (10 per cent oil turpentine solution).

Non specific protein therapy has been advocated. Aolan has been used. Ziemann (1) employed intravenous injections of yatrien casein, an antiseptic and bactericide composed of iodine (five parts) oxychinolin (eight parts) and sulphonic acid (seven parts) combined with sodium bicarbonate to neutralize the acid radical. It may be used externally orally intravenously or subcutaneously.

Increase of elimination by laxatives, increase of fluid ingestion and bodily and local rest are to be advised.

When incision or injection is decided upon in the treatment of furuncles and carbuncles a choice of anæsthetic must be made. Ethyl chloride recommended by Franke (7) is useful but must be properly applied to produce a good anæsthesia and to prevent the very marked danger of gangrene. The injection of a local anæsthetic is approved by Freeman (29) and Farr (25) but is disapproved by de Takats (10). Axhausen (1) uses novocain before glow needle therapy. Sometimes it is possible to block the sensory nerves supplying the infected area by local anæsthesia. For anæsthesia of lip and nose furuncles Klinger (67) has injected 1 per cent novocain into the supra-orbital nerves. Wilmoth (122) uses hyoscine morphine anæsthesia. Nitrous oxide or ethylene are probably the best.

Griffiths (39) outlines his treatment of carbuncles as follows:

1. *General treatment* (a) measures to increase the patient's resistance to the spread of infection (b) elimination of toxins (c) induction of sleep.

Local treatment (a) relief of pain (b) removal of necrotic tissue (c) arrest of infection in surrounding parts (d) epithelization of raw surface after separation of sloughs.

Chiari (14) outlines the following treatment of lip furuncles:

Mild cases (1) heat (2) rest (3) prohibition of speech (4) fluid nourishment (5) with the appearance of fluctuation a small incision with the crutery.

Transitional cases (1) autogenous blood injections (2) simple central cauterization (3) hyperæmia (4) special heat.

Severe cases (1) autogenous blood injections (2) hyperæmia (3) splitting thermocautery incision (within the infected area).

Carp (13) studied 153 cases of carbuncles at the Presbyterian Hospital, New York, in an effort to compare the merits of four different methods of treatment viz. (1) X ray irradiation plus accessory therapy (2) surgery plus accessory therapy (3) conservative treatment and (4) blood circuminjection without accessory treatment. Because of the dissimilarity of carbuncles and the lack of a definite scheme of tabulation it is extremely difficult to compare methods of treatment. He presents the following conclusions for consideration:

1. In large carbuncles, diabetic and non-diabetic, the treatment of choice is radical surgery.

In small superficial carbuncles and in some large carbuncles including those of the face X ray therapy as an aid to conservative therapy (poultices, carbolization, etc.) has given good results. If however improvement does not occur in from three to four days other measures (surgery, circuminjection of autogenous blood) are indicated.

3. In diabetic carbuncles the prompt establishment of free drainage is essential to prevent spread of the infection. X ray therapy without surgery is contra indicated.

4. Circuminjection of autogenous blood may be used in selected cases and is a valuable adjunct to the treatment of accessible spreading infections by any other method.

5. There has been no proof in the clinical cases analyzed in this series that X ray therapy alone effected a cure. Reports in the literature seem to confirm this experience.

SUMMARY

Each furuncle and each carbuncle is a problem in itself. There are no inflexible rules governing the treatment of these types of infection. In but few surgical ailments is a like amount of judgment and experience required to make an accurate diagnosis of the type of the lesion, its state of progress and the most appropriate form of treatment. The high morbidity of furuncles and carbuncles and the mortality of the latter particularly those on the face demand the most serious thought and discrimination in the choice of treatment. The surgeon must have a thorough appreciation of the underlying pathology and

physiology. He must keep in mind the risk to the patient, the amount of pain, and the duration and expense of the treatment. In our present state of knowledge, the safest treatment is that which best brings about localization of the infection, if possible, effective drainage, and rapid healing. Many of the newer methods proposed are well worth study, but have not yet been used in a sufficient number of cases to prove their value.

Surgeons will await with interest further reports on autogenous blood circuminjection and the criteria which govern its use. The administration of tin is so simple that it would doubtless be widely adopted if more recent and more abundant reports of its usefulness were available. The danger of traumatism to necrotizing infections from premature or ill-advised incisions has become a matter of more general knowledge.

In the case of a bundle dissection and a dissection, the treatment of choice is radical surgery. (1) Most frequently, a case is best treated by conservative measures (hot, moist dressings, often in the form of a wet cloth) until the discharge is spontaneous or until fluctuation indicates a need for drainage. In certain cases, a bundle can be safely measured, just as it is for the first forty-eight hours. If the drainage is not sufficient, it is of that type, it is a case of a bundle.

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H hn E V S nu Pe an (R d ble Blood
 T mo of th C num) It Org n nd It
 Rel ti n t Hæmangi ma and Abn m l
 A te l en us Commun cat on R po t of
 C e 17 / 3 8 9 8 3

S nus peri rani is the same most frequently used in European literature to designate blood cyst or hæmangioma of the pericranium communicating with a intracranial blood sinus by one or more abnormal foramina in the skull. The condition was discovered and named by St Meyer.

Clinically it is characterized by a soft compressible fluctuating swelling that increased in size by the dependent posture, coughing, crying, and slight compression of the jugular veins. In some cases the lesion may not be apparent unless some of the factors that increase intracranial pressure are active. The mass may be bluish and may be easily mistaken for a meningeal. The roentgenogram generally shows an area of refraction in the skull.

Moderate pain is the only symptom. The lesion may occur at any age. It is relatively unusual but doubtless has sometimes been described under other names. The author urges the persistent use of the name sinus perirani. In a review of the literature he has able to find eighty cases. In this article he reports a case in which surgical removal effected permanent cure. Electrocoagulation was used to control bleeding from the emissary veins.

Hahn suggests that the lesion may originate by the formation of abnormal arterial communication. According to his theory, a significant trauma may be the predisposing factor. The small fistulae once established cause dilatation and tortuosity of the veins subjected to the abnormal pressure. Gradually the fistulae form a series of vascular channels, peepholes, and arteries cannot be differentiated. Bone absorption follows as a result of dilatation of the emissary veins and the process spreads into the diploic veins causing constant pressure.

The temperature is irregular convulsions frequently occur and there is marked anorexia and difficulty in nursing due to the pus in the nostril

The lesion may heal with or without the persistence of discharging sinuses or the development of secondary purulent foci or death may result before secondary foci have time to develop

The author reports two cases both of which were due to the staphylococcus aureus

J H H GARLOCK M D

EYE

Cohen M William J A and Kamner M Comparative Chemical Studies of the Ocular Fluids of the Cerebrospinal Fluid and of the Blood
Arch Ophthalm 19 8 111 39

The depression of the freezing point was determined in nine specimens of vitreous filtrate nine specimens of aqueous humor and three specimens of cerebro spinal fluid of oxen all taken immediately after death and from the data obtained the osmotic pressure and molar concentration were calculated The freezing point depression and osmotic pressures were found to be almost identical The molar concentrations being similar it is a problem to explain why the vitreous has a greater viscosity than the aqueous humor or cerebro spinal fluid

The viscosity of blood serum vitreous filtrate aqueous humor and cerebro spinal fluid of the ox and of water were determined Aqueous humor and cerebrospinal fluid have viscosity slightly greater than the viscosity of water and with rising temperatures their curves decline parallel with that of water The viscosity of vitreous filtrate approximates that of blood serum Blood contains 100 times more protein than vitreous filtrate and the latter has a protein content comparable with that of aqueous humor and cerebrospinal fluid Hence the protein contents of these fluid cannot be the sole factor determining their viscosity

The calcium content of vitreous filtrate and of aqueous humor is greater than that of cerebrospinal fluid In a comparison of certain inorganic compounds in vitreous filtrate aqueous humor and cerebrospinal fluid of oxen it was found that the average content of chlorides and sodium in the cerebrospinal fluid is greater than the average content of these substances in aqueous humor and vitreous filtrate the ocular fluid contain more potassium and inorganic phosphorus than the cerebro spinal fluid and the concentration of chlorides sodium and inorganic phosphorus in the aqueous exceeds that in the vitreous filtrate

In conclusion the authors state that because of the lack of uniformity in the concentration of cations and anions in these three fluids it is doubtful whether we can explain the origin of all of these fluids by a simple physical process of dialysis from the blood plasma unless we postulate a difference in the permeability of the separating membranes

LXXXV A Corps M D

Cosgrove K W and Hubbard W B Acid and Alkali Burns of the Eye
Ann Surg 1928
LXXXVII 89

In a study of the treatment of acid and alkaline burns of the eye the authors performed experiments on rats and rabbits The irritants used were sulphuric acid nitric acid phenol sodium hydroxide and ammonium hydroxide Their findings indicated that regardless of the concentration of the chemical and the length of time that elapses before treatment is given the best results are obtained from irrigation and that neutralization causes definite damage

VIRGIL WESCOTT M D

Rosenow E C Focal Infection and Elective Localization in the Pathogenesis of Diseases of the Eye
Ann Otol Rhinol & Laryng 1910 19
XXIX 863

The author reviews the more important clinical and experimental studies on the pathogenesis of nonsyphilitic and non tuberculous intrinsic infections of the eye and the requirements for the successful application of the methods of study The method of intravenous injection of primary (often mixed) or freshly isolated pure cultures of material from foci of infection has led to a better understanding of how these seemingly harmless localized areas of infection often small and in obscure places cause ocular manifestations and by this method the causative organisms usually responsible have frequently been isolated

In the light of the newer knowledge foci of infection where ever found should be looked upon as areas where bacteria and their toxic products are afforded favorable conditions for entrance into the blood or lymph stream where they may acquire or maintain a peculiar or relatively high invasive power They make for a forced relationship between the parasite and host

The good effects commonly noted following the removal of foci of infection support the experimental findings justify a thorough consideration of their existence and call for removal or cure as far as possible of focal infection in every obscure clinical case The successful application of the methods of study while simple require close cooperation between the bacteriologist and clinician The experimental results indicate clearly that those lesions in the eye which are associated with exudation even though slight are usually due to the localization of microorganisms while the milder manifestations may sometimes be due to the absorption of toxins which are formed in the focus or elsewhere and reach the eye in the blood stream

Localization of the bacteria in the eye may sometimes be accidental and a part of other disease manifestations However the animal experiments now amply corroborated indicate clearly that in most instances localization and growth are due to peculiar acquired or inherent properties within the bacteria themselves and the power of the microorganisms to localize electively and that this is due in part to the

production of a toxic or poisonous which affects specifically the tissues in which localization and growth occur

Among the microorganisms isolated which manifested the greatest electivity localizing particularly in the eye, have been reproduced: a streptococcus which usually forms greenish or slightly hæmolytic colonies on blood agar and requires a high degree of oxygen tension for its isolation and from which autogenous therapy with vaccines of great value in many cases have been prepared

Wilms W H Clinical Aspects of Ocular Tuberculosis

Tuberculosis is the cause of 40 per cent of cases of uveal inflammation and 4 per cent of cases of choroiditis and 14 per cent of cases of hemorrhagic retinitis. The author classifies the types of ocular conditions which may be tuberculous:—1. Uveal inflammation, 2. Choroiditis, 3. Retinitis, 4. Hemorrhage, 5. Tuberculous conjunctivitis, 6. Tuberculous keratitis, 7. Tuberculous iriditis, 8. Tuberculous cataract, 9. Tuberculous glaucoma, 10. Tuberculous optic atrophy, 11. Tuberculous exophthalmos, 12. Tuberculous encephalitis, 13. Tuberculous meningitis, 14. Tuberculous abscess, 15. Tuberculous sinusitis, 16. Tuberculous osteomyelitis, 17. Tuberculous arthritis, 18. Tuberculous myelitis, 19. Tuberculous neuritis, 20. Tuberculous lymphadenitis, 21. Tuberculous lymphadenoma, 22. Tuberculous lymphosarcoma, 23. Tuberculous carcinoma, 24. Tuberculous melanoma, 25. Tuberculous sarcoma, 26. Tuberculous glioma, 27. Tuberculous astrocytoma, 28. Tuberculous ependymoma, 29. Tuberculous meningioma, 30. Tuberculous glioblastoma, 31. Tuberculous medulloblastoma, 32. Tuberculous neuroblastoma, 33. Tuberculous neurocytoma, 34. Tuberculous neurofibroma, 35. Tuberculous neurofibrosarcoma, 36. Tuberculous neurosarcoma, 37. Tuberculous neuroepithelioma, 38. Tuberculous neuroepithelioma, 39. Tuberculous neuroepithelioma, 40. Tuberculous neuroepithelioma.

Tuberculosis of the eye is a local disease, but it may spread to other organs of the body. The most common site of involvement is the choroid, which may be affected alone or in association with the retina. The disease may also involve the iris, ciliary body, and optic nerve. The clinical picture is characterized by a gradual onset, with pain, redness, and swelling of the eye. The vision may be affected, and there may be a discharge of pus. The disease may progress to a stage of ulceration and perforation of the globe, or it may result in a permanent loss of vision. The diagnosis is based on the clinical picture, and confirmed by histological examination of the affected tissue. The treatment is by the use of tuberculin, which may be given in the form of injections or by the use of the Koch's phenomenon. The prognosis is generally good, but it may be poor in some cases.

When the eye is involved in general tuberculosis, the bacteria are more virulent and destructive of the eye, leading to a more rapid and severe course.

In the diagnosis of ocular tuberculosis, a careful examination of the fundus of the eye is essential. The patient should be watched for a few days, and the vision should be tested frequently. The use of a slit lamp is of great value in the examination of the eye. The treatment is by the use of tuberculin, which may be given in the form of injections or by the use of the Koch's phenomenon. The prognosis is generally good, but it may be poor in some cases.

The therapeutic use of tuberculin in the eye is a controversial subject. Some authorities believe that it is of great value, while others believe that it is of little or no value. The use of tuberculin should be based on the clinical picture, and the results should be watched carefully. The use of tuberculin should be discontinued if there is no improvement in the disease.

these fowls is re injected into rabbits and mice it may attack the lens of the young *in utero*. It has no effect upon the lens or other orbital contents of the mother. Davis suggested that a solution of the emulsified lens of an animal injected into man might cause the active formation of antibodies which will cause the absorption of lens opacities.

The author treated the following types of cataracts according to Davis' directions: traumatic two, cortical fifteen, sclerosed nucleus five, diabetic four, and cataract complicating glaucoma one. In fourteen cases the cataract progressed and in thirteen no change in its progress was noted. In no instance was there any absorption of the cataract or improvement of vision.

LYMAN A. COPPS, M.D.

Sowers A. Retinitis Punctata Albescens. *Im J Ophth* 1928 xi 354

Sowers reports two cases of retinitis punctata albescens in members of a family described by Lauber seventeen years ago. In both cases good vision had been retained but there was hemeralopia. The fundus picture was practically unchanged.

The condition is familial, congenital and bilateral and occurs in negroes as well as white persons. Consanguinity is an important factor in its development. Hemeralopia is found in two thirds of the cases.

The author discusses the differential diagnosis. He states that treatment with arsenicals and mercury is said to be beneficial.

SAMUEL A. DURR, M.D.

Jones L. W. Retinitis with Massive Exudates. *Im J Ophth* 1928 xi 351

The author reports a case of retinitis with massive exudate and small changes in the blood vessels in the right eye of a boy, nine years of age, whose only complaint was a swollen cervical gland. The retina appeared to be detached along the course of the inferior temporal branch. The general physical examination was entirely negative.

Following a review of the literature, Jones states that in von Hippel's disease the prominent feature is the blood vessel change, whereas in Coat's disease it is the exudate, but the two conditions seem to be very similar. In conclusion, he cites several cases in which improvement seemed to follow the injection of tuberculin, though there was no visual change.

SAMUEL A. DURR, M.D.

Paterson J. A. The Etiology, Diagnosis and Prognosis of Optic Neuritis. *Brit M J* 1927 i 863

Ronne H. The Nomenclature of Optic Neuritis. *E I M J* 1921 ii 866

Ballantyne A. J. Optic Neuritis as an Aid to Diagnosis. *Brit M J* 1927 i 869

PATERSON states that by the term optic neuritis the oculist usually means a certain type of morbid change which he sees in the optic disk. Edema and

inflammatory changes involving parts of the optic nerve other than its distal end he calls retrobulbar neuritis.

In Paterson's opinion the classification of cases of optic neuritis should be based upon a study of the body as a whole and not on the ophthalmoscopic picture alone. When the condition is studied from this angle the cases associated with intracranial pressure will be found to form a class by themselves, not only on account of the disk changes but also on account of the absence of pronounced visual disturbances in the early stages.

In the study of the disk changes the use of the Gullstrand ophthalmoscope is of the greatest importance. Any noteworthy defect of central vision should be carefully investigated. In the determination of the site and extent of the intracranial disturbance a careful study of the visual fields may be of great aid. The results of lumbar puncture, X-ray examination, the Wassermann test, and the neurological examination must also be taken into consideration.

Cases of increased intracranial pressure with changes in the disk should be operated upon early in order that the patient may have the best possible chance of retaining vision. When once the stage of optic atrophy is reached operative treatment is disappointing. Medical treatment seems to offer a prospect of cure only in definitely luetic cases. Prolonged increased intracranial pressure is caused mainly by brain tumors, cysts, abscesses, gummatous or tuberculous nodules, intracranial aneurisms, extravasated blood, sinus thrombosis, meningitis and deformities of the skull.

Optic neuritis not accompanied by increased intracranial pressure is due primarily to inflammatory processes in the nerve or its sheath which may lead directly or indirectly to changes in the disk. This type does not present the transparent glassy swelling of the papilla so characteristic of the edema accompanying increased intracranial pressure. The disk rapidly becomes less transparent and the lamellae become invisible. The roots of the vessels are veiled by swollen nerve fiber tissue. This veiling extends some distance from the disk. The color of the disk is more intensely red, the veins are apt to be distended and the arteries are small. Central scotoma with failure of vision is common and depends upon the presence of inflammatory foci in the course of the nerve. In a large group of cases the condition is due to toxins in the blood and the course and prognosis seldom appear to be modified by the presence or absence of visible changes in the disk. In the early stages these changes are usually absent and the diagnosis must be made from a careful study of the visual disturbance, the history and the general symptoms. As a rule only one eye is affected.

Among the well established causes of retrobulbar neuritis disseminated sclerosis holds first place. There are a large number of acute cases whose origin is not known. Retrobulbar neuritis is believed by many to be due to involvement of the optic nerve

be manifested both by acute diseases of the optic nerve and by quite slowly developing atrophy resembling intoxication amblyopia. The prognosis in the group of diseases under discussion is rarely quite hopeless but varies in accordance with the etiology and the clinical type of the condition. A common finding in these conditions is temporal pallor of the disks.

The anatomical basis of the acute forms, doubtless an irregular plaque formation in the optic nerve. Studies of disseminated sclerosis, myelitis, and optic retrobulbar neuritis and retrobulbar neuritis in cases of thrombosis have shown that the point of special interest is the relation of the axon cylinder and medullary sheath. In disseminated sclerosis and in optic nerve lesions the medullary sheath is destroyed before the axon cylinder.

A disease characterized by a tendency to attack the macular fibers should be termed retrobulbar neuritis, but it must be borne in mind that not every case with normal disk and central scotoma is the field of retrobulbar neuritis.

The peculiar condition known as choked disk with sudden onset and blindness usually calls for immediate operative treatment by trephination but there are cases in which recovery or improvement of vision occurs either spontaneously or after non-operative treatment.

conditions and (2) optic neuritis or neuroretinitis of renal disease

The optic neuritis of meningitis differs from cerebral tumor in being less prominent and more diffuse but in tuberculous meningitis the disk swelling is apt to resemble that of intracranial tumor being higher and more circumscribed

The optic nerve affection which has been most frequently reported as being found in association with pregnancy is chronic retrobulbar neuritis but there seems to be considerable controversy regarding the picture and cause of this condition Much has been written on the rôle played by intranasal conditions in its etiology but there is as yet no agreement with regard to the following problems (1) the type of nasal disease which gives rise to optic neuritis (2) the clinical characteristics of optic neuritis due to disease of the nose and nasal sinuses (3) the period at which operative intervention is indicated (4) the operation of choice and (5) the manner in which operation causes improvement or cure

There is no characteristic defect of the visual field which distinguishes optic neuritis of nasal sinus origin from other types but a careful investigation of the visual field may exclude pituitary tumor and other conditions giving rise to characteristic changes in the visual fields

Multiple sclerosis probably accounts for a larger percentage of cases of retrobulbar neuritis than diseases of the nasal sinuses but since optic neuritis may be an isolated condition it may be necessary to wait a considerable time before the diagnosis of multiple sclerosis is confirmed by other nervous manifestations Hensen has emphasized the importance of the duration of the central scotoma in retrobulbar neuritis due to multiple sclerosis

With regard to the question of the operative treatment of these cases Ballantyne is inclined to adopt a conservative attitude He believes that it is usually safe to recommend medical treatment for from six to eight weeks If improvement is not noted and the condition of the nose is suspicious at the end of that time operation is justified

LESLIE L. MCCOY, M.D.

EAR

Fraser J. S. A National Investigation of Otosclerosis *Proc Roy Soc Med* Lond 1928 xxi 387

Fraser finds otosclerosis in about 10 per cent of his patients and believes it is more common than statistics indicate On account of the great loss of national efficiency for which it is responsible he urges that a national investigation of the condition be made

JAMES C. BRASWELL, M.D.

Lillie H. I. General Sepsis of Otitic Origin Treatment by Blood Transfusion and Germicidal Dye *Arch Otolaryngol* 1928 vii 30

The author reports twelve cases of general sepsis of otitic origin treated by blood transfusion with or

without the intravenous injection of a germicidal dye He is not prepared to say whether the combined method or blood transfusion alone is preferable as the patients who were treated with blood transfusion alone seem to progress as well as the others

Untoward results have been reported from the use of the methods under discussion but the danger can be reduced to the minimum if the services of an expert hematologist or biochemist are obtained Internists and house officers are usually not sufficiently experienced in the use of these specialized therapeutic measures

From his own experience and that of others the author concludes that blood transfusion and the injection of a germicidal dye as adjunct therapeutic measures are rational if the cases are properly chosen and the agents properly prepared and administered The supportive effect of blood transfusion shortens the convalescence and the germicidal dye has a curative effect

Lillie neither advocates nor defends the use of these measures but believes they have a place in the management of sepsis of otitic origin

NOSE AND SINUSES

Hempstead B. E. Intranasal Surgical Treatment of Chronic Maxillary Sinusitis *Arch Otolaryngol* 1927 vi 426

In the technique used by the author for the intranasal surgical treatment of chronic maxillary sinusitis anesthesia is induced by means of cocaine epinephrine mud on applicators placed in the region of the anterior ethmoidal nerves and the sphenopalatine ganglion A pledget of cotton soaked in a 10 per cent solution of cocaine is placed under the lower turbinate The mucous membrane at the anterior end of the lower turbinate is injected with a 0.2 per cent solution of cocaine

An incision is then made through the anterior attachment of the lower turbinate so that the latter can be broken upward and the lower meatus exposed to full view If a flap is desired to cover the edge of the window the mucous membrane together with the periosteum is dissected free at the time The Wilhelmsky trocar is inserted about half way back and the wall is broken through This allows the introduction of the cutting forceps The window is enlarged posteriorly as far as desired With a modified Kerrison punch the window is brought far forward If it is sufficiently large there is little likelihood of its closing particularly if the flap of periosteum and mucous membrane is saved and laid over the raw edges An effort is made to make the window level with the floor of the nose The edges are smoothed with either the rasp or the hand burr The antrum is then cleaned with the suction tube with the least possible trauma The curette is not used in the antral cavity A fair view of the greater part of the cavity is obtained by introducing a nasal speculum

ly used. In cases of smaller lesions the nodes of the neck are removed on the following day if possible before a local reaction occurs. If the mouth lesion is extensive radium is used over the neck and the nodes are removed as soon as the local condition permits. In the treatment of cancer of the jaws surgical diathermy is employed for the local lesion. The nodes of the neck are removed when the lesions are extensive or when the chest is involved.

NECK

Van Dine Wilderbe L. D. p. A. tinomycosis of the Neck and Mediastinum. *Int. J. Otol. & Laryngol.* 9:3 5

With the extension of the face the most frequent site for tinomycosis is the upper half of the neck. The larynx and trachea are often attacked simultaneously. A tinomycosis of the mediastinum is always secondary. The out-of-penetration of the fungus according to Bollinger, who first described it in 1873, is through the tonsils or the air or food passages. When the mediastinal dome has been invaded the infection if it persists lifts the subapical cellular sheath of the greater and lesser pectoral muscles and may tend to form a vast rabbit ear abscess in the axillary region.

The primary tinomycotic lesions are characterized by the presence of yellow bodies of various sizes which have a grossly granular appearance. When these granular bodies are examined under the microscope after being crushed between two slides they findings differ according to whether the examination is made of the clinical specimen or with the cultivated point. In the first case the bodies consist of mycelial filaments with here and there small nodular swellings which strongly resemble spores. After cultivation these swellings are absent and only the filamentous mycelium is found.

The asexual mycelial module often breaks down. When this occurs the characteristic yellow granular bodies may be observed. The diagnosis may be confirmed by making a culture on Sabouraud's medium (glucose maltose medium) or may be based on the complemented vaccination reaction. The serum of the patient with actinomycotic parastitis contains specific antibodies.

A tinomycosis of the mediastinum has a much more grave prognosis than cervical actinomycosis because of the dangerous extension to the adjacent organs. It has a certain tendency to progress toward the thorax. When it does so extend the anterior thoracic wall bulges and an abscess with osteitis is formed.

The surgical treatment is largely a matter of the extent of the disease to the endothoracic organs. If the lung is damaged an incision is made on by a surgeon who can expect a pulmonary abscess and a ganglion will be necessary.

The treatment consists in the opening of the focus by simple incision and mechanical removal of tissue mass with a sharp curette or scissors followed by

tamponment of the cavities and fistula with iodoform gauze

Superficial foci may be cured by potassium iodide alone. Potassium iodide does not destroy the fungus but acts rather on the neoplastic tissues and through them upon the parasitic foci causing the latter to break down and thereby quickly establishing drainage to the surface.

In some cases pneumectomy has given good results

MORRIS H. KAHN, M.D.

Sistrunk, W. E. The Technique of the Removal of Cysts and Sinuses of the Thyroglossal Duct. *Surg. Gynec. & Obst.* 1938, 66: 109.

Sistrunk explains the formation of cysts of the thyroglossal duct on the basis of an abnormality in the development of the duct following the descent of the thyroid gland. When the duct fails to close completely and the foramen cecum fails to remain open, a cyst is formed by the retained secretion. The cyst is always in or near the median line.

In the technique used by Sistrunk for the removal of cysts and sinuses of the thyroglossal duct, the course of the sinus tract is outlined with injected methylene blue. The cyst is then exposed through a longitudinal excision and dissected free from the hyoid bone from the center of which a small segment is removed. The foramen cecum is then located and the duct and surrounding tissues are corded out from below upward to the foramen.

The author gives exact directions for determining the course of the duct. This method obviates the risk of fragmentation of the duct with retraction and loss of segments.

Hertzler, A. E. The Pathogenesis of Goiter Considered as One Continuous Disease Process. *Arch. Surg.* 1938, 66: 61.

Hertzler distinguishes two main types of goiter: the colloid goiter, sometimes called adolescent goiter, and the toxic goiter. But he states that all goiters may well be considered as stages and variations of a single thyroid disease.

The colloid goiters show large acini filled with colloid. In the interstitial walls there is frequently cellular activity. These areas become encapsulated and the cell conglomerations may or may not show a lumen. At this stage the patient may or may not present clinical symptoms. Macroscopically, the surface of the gland may be smooth or bosselated. If the bosselations become deeper on palpation, the gland may appear as an adenoma, though the histological structure is not changed.

The picture of toxic adenoma differs from that of the innocent stage of the goiter only in the greater vascularity. Various areas of the gland are still of the old colloid type. In other areas the cellular activity is marked. The acute toxic stage develops usually in persons previously unaware of the presence of a goiter. In histological sections colloid areas may still be found. If there are symptoms of toxicity, there will be areas of proliferation and

if eye symptoms are present there will be papillated areas. The chief change as compared with the toxic adenoma is that the gland becomes firmer and more sensitive to pressure.

In conclusion, the author says: medical treatment during all except the early stages of goiter is as deadly as medical treatment for cancer.

I. S. MODERN, M.D.

Sager, W. W. Exophthalmic Goiter: Pathological Change as a Result of the Administration of Iodine (Lugol's Solution). *Arch. Surg.* 1927, 8: 88.

Iodine in the form of Lugol's solution was introduced by Plummer in the pre-operative and post-operative treatment of patients with exophthalmic goiter in 1902. By differentiating adenomatous goiter with hyperthyroidism and exophthalmic goiter, Plummer had made it possible to avoid the danger of indiscriminate use of iodine and its subsequent unsatisfactory results in cases of adenomatous goiter. In an article published in 1925, Plummer says: "While preparing an article for publication in *Oxford Medicine*, I suddenly became convinced that there are many reasons why the action of iodine might have been misinterpreted. The chief of these was the lack on the part of observers of a correlation of the fluctuating data throughout the course of the disease on a clear-cut hypothesis of the presence of two factors: whether or not the factors are two products of the thyroid gland." He states further: "Many reactions that might follow the administration of iodine were considered. The complete iodination of the thyroxine molecule in the tissues of the body seemed possible but not probable. That the iodine might lead to more complete iodination of thyroxine in the gland or that it might block its discharge seemed more probable. Irrespective of the degree of stimulation, the thyroid will not elaborate much of the abnormal secretion if a sufficient amount of iodine is available."

In this series of cases the epithelium of the acini, the connective tissue, blood vessels and lymphocytic cells of the stroma and the colloid found in the acini were studied and the results with and without the administration of iodine were compared. Paraffin sections of 100 thyroids were studied; 100 of the patients had received Lugol's solution and 100 had not.

The most noticeable change in the thyroids after the administration of iodine is the increase in the amount of colloid. Such increase gives a histological picture similar to that of colloid goiter in which there are hyperplastic areas. The colloid also stains lighter and does not appear vacuolated as in cases of exophthalmic goiter.

Marine and Williams in 1908 published the results of a study of seventeen patients who had been treated with iodine pre-operatively. They came to the conclusion that there was an increase in the amount of colloid following iodination.

The hyperplasia noticeably decreases after the administration of iodine. The word hyperplasia is used to describe a condition in the parenchyma of the gland in which the number of cells appear to increase although this was not proved.

In the cases in which iodine was given and in those in which it was not given the amount of colloid increased as the amount of hyperplasia decreased as pointed out in 1908 by Marine and Williams as true in general for thyroid glands.

The columnar epithelium also changed after the administration of iodine. It was not present in as large quantity. There was a decided increase in the amount of cuboidal epithelium lining the acini a certain variable percentage of which was low cuboidal and some of which was so flat as to lose even the characteristics of low cuboidal epithelium. The cells being low in proportion to their width at the base.

In the study reported the amount of connective tissue as compared with the amount of parenchymatous tissue and colloid seemed to be decreased after the administration of iodine.

The lymphatic vessels in the gland presented the same anatomical picture after the administration of iodine as when iodine was not given. They were present in small nodes or without organization.

The blood vessels seemed smaller by comparison although this could not be determined with certainty since the change if any was so small as to require the larger arteries an exact comparison of the same blood vessel before and after the administration of iodine.

Marine and Lenhart in a discussion of the question which takes place in the thyroid in cases of exophthalmic goiter not treated by iodine described anatomical changes that cannot be distinguished from the change which takes place after treatment with iodine except that after treatment with iodine the hyperplasia seems to show a greater tendency to disappear without leaving any definite trace of its presence.

Bowing H H M Malignant Tumors of the Thyroid Gland Treated by Operation Radium and the Roentgen Rays Am J R 15 11 98

5

In the application of radium (salt) or radon through drainage tubes the strength should be about 50 mgm or mc. The filtration should be equal at least to 0.5 mm of silver and when possible 1.0 mm of brass should be used. The wall of all of the rubber drainage tube should be at least 1.0 or 2.0 mm thick. The time of application varies being dependent upon the presence or absence of important structures such as blood vessels and nerves in the treatment field. Moreover if the applicator is just beneath the skin the time should be reduced at least one third or one half the average time. When surgery is contraindicated especially in the nodular fixed tumor radium needles (salt) should be buried through the mass the average dose mentioned here seems safe. If the tumor is of a diffuse medullary type radium surface packs or roentgen ray treatment should be chosen. Surgical interference in this type should be limited to the removal of a specimen for study. The factors for radium surface treatment seem safe but as erythemas have occurred the time factor should be reduced to ten or twelve hours. In general the surgeon should carry his procedure as far as safety will permit. The radiologist should give full cooperation at the time of operation and after wards. If radium is not available roentgen ray therapy is indicated as a postoperative measure.

This brief study emphasizes that malignant goiters should be excised if possible and decompression followed by irradiation performed when necessary. In selected cases the removal of adenomatous of the thyroid seems to be a satisfactory procedure for the prevention of malignant disease.

All cases should be classified according to operability and further classified as to whether or not the irradiation was complete or incomplete. A careful follow-up plan should be instituted in order that activity may be determined as early as possible.

SURGERY OF THE NERVOUS SYSTEM

BRAIN AND ITS COVERINGS CRANIAL NERVES

Lillie W. I. Ocular Phenomena Produced by Basal Lesions of the Frontal Lobe *J Am M* 155 1927 lxxiv 2099

The early localization of a tumor or abscess in the frontal lobes has been extremely difficult from the ophthalmological as well as the neurological standpoint. The usual ophthalmological findings are bilateral choked disks associated with good visual acuity and concentric contraction of the peripheral fields of vision. In cases of basal lesions of the frontal lobe there may be rather striking ophthalmological findings which are exact enough to place the burden of localization on the ophthalmologist. Of a series of proved lesions of the frontal lobe more than 15 per cent (thirteen of eighty six) could be definitely localized from the ophthalmological examination whereas the neurological data were not characteristic enough to show that a frontal lobe or which lobe was involved. Loss of the sense of smell occurred too rarely to be of diagnostic value.

The characteristic feature in the exact localization of basal lesions of the frontal lobe is found in the perimetric fields. In seven of the fourteen cases reported a definite central scotoma was found on the side of the lesion four of these were central scotomata and three were caecocentral scotomata. If pressure continues for a time the caecocentral scotoma enlarges and the peripheral field becomes smaller and smaller until only a small peripheral isle of vision remains either temporal or nasal to the fixation point. This type of field was found in three cases. If the pressure persists complete amaurosis is produced on the side of the lesion as was noted in one case. With bilateral or median line lesions bilateral central scotomata occur as was shown in three cases of the series. In one case complete amaurosis in both eyes was produced by a left basal endothelioma of the frontal lobe which pushed the left temporosphenoidal lobe medially to press directly on the optic chiasm. This is an extraordinary complication and cannot be considered part of the usual ophthalmological syndrome. Chiasmal lesions can produce scotomatous field defects similar to these but bitemporal defects for form and colors are associated with the scotomatous changes and are rarely associated with choked disks.

The fundal changes are not so characteristic. In seven cases there were bilateral choked disks while in only four was there a normal or pale disk on the side of the lesion with an associated choked disk on the opposite side. In the three other cases the condition of the fundi varied from bilateral pallor of the disks with some blurring to a slight blurring of

one disk and a definite choked disk on the opposite side. Apparently there is no definite sequence in the development of the choked disk or pale disk as in a few cases the fundi were found absolutely normal at one examination and a few days to a week later an early choked disk was found either beginning on the side of the lesion before the opposite side was affected or just the reverse. Again the normal disk had become pale without evidence of oedema of the disk developing on the side of the lesion. Nine of the fourteen cases showed evidence of bilateral oedema of the disk during the period of observation a fact suggesting that a retrobulbar picture with a concomitant choked disk is not the usual condition.

The author draws the following conclusions:

- 1 Basal lesions of the frontal lobe can be localized accurately from the ophthalmological examination.

- 2 In a unilateral lesion a homolateral central or caecocentral scotoma associated with a normal pale atrophic or choked disk with contralateral normal central vision and choked disk is characteristic.

- 3 In a bilateral lesion bilateral central or caecocentral scotomata are present in association with bilateral choked disk.

- 4 Basal lesions of the frontal lobe are common (15 per cent) and can be diagnosed as readily and as accurately ophthalmologically as lesions of the optic chiasm.

Sharpe W. Observations Regarding Ventricular Punctures *Ann Surg* 1928 lxxvii 1

While appreciating the value of Dandy's trans-cortical ventricular puncture for the localization of intracranial lesions Sharpe calls attention to the dangers of the procedure and recommends that it be used only when a remediable condition is suspected but cannot be localized by other methods.

LEO M. DAVIDOFF, M.D.

Goette K. Roentgenological Visualization of the Cerebellum (Ueber roentgenologische Kleinhirndarstellung) *Acta radiol* 19 7 viii 340

Goette states that satisfactory roentgenogram of the cerebellum can be obtained after puncture of the cistern with the head bent forward. It is still to be determined however whether this method will prove of value in diagnosis.

A case of cyst of the cerebellum in which roentgenograms were made in this way is described.

Moersch F. P. Tumors of the Brain and Syphilis *J M Sc* 1928 clxxv 12

Neither the serological data the condition of the fundus nor any one cardinal symptom is pathognomonic of brain tumor or syphilis.

The presence of a choked disk can not be accepted as pathognomonic of brain tumor either in the presence or absence of positive reactions of blood and spinal fluid. In such cases a diagnosis should be attempted only if the case is not positive to a therapeutic test asuming that the patient is not at a time when a therapeutic test is possible.

Tumor of the brain is sometimes incidentally diagnosed as syphilis because of a positive Wassermann reaction of the blood. (1) positive Wassermann reaction of the blood. (2) positive (3) a positive Wassermann reaction of the blood and an unusual condition of the spinal fluid. (4) a negative Wassermann reaction of the blood but a positive reaction of the spinal fluid. (5) a negative Wassermann reaction of the blood but an unusual condition of the spinal fluid.

The diagnosis is frequently made because of a choked disk in spite of serological changes. The incidence of a choked disk in cases of syphilis is such that the finding of a choked disk in cases of suspected brain tumor should not be accepted as a positive differential point.

Cr. G. W. M. K. Malignant Intracranial Endothelioma. S. G. G. J. Ob. 1910.

Intracranial endothelioma is a not a very frequent small percentage are malignant. The degree of malignancy is judged from the amount of cellular differentiation and mitosis. The tendency of the cells to arrange themselves in regular formation. The malignancy is graded from 1 to 4.

Tumors graded 1 and 2 are the least malignant and are characterized by more complete differentiation of the cells, fewer mitotic figures and a more tendency to form lobes and pseudopodia. In tumors graded 3 and 4 the microscopic picture becomes more cellular and less regular. The malignant tumor (graded 4) is not regular. The cells being undifferentiated and mitotic figures being scattered throughout.

From the surgical standpoint these malignant endothelioma if they have not invaded surrounding structures are comparable to such malignant tumors elsewhere in the body. They are completely removed a definite cure is effected. However when they have broken through the capsule and have invaded the surrounding tissues the grade of malignancy indicates the likelihood of recurrence. Endothelioma that has stood for a short time without rapidly progressing is more likely to be cured early and completely. Graded 3 and 4.

Elberg, C. A. The Duodenal Cyst. Pres. Op. 1910.

Elberg calls attention to the feasibility in the compression of the splenic duodenum into an outer and inner layer. When this is done the thick

outer layer may be removed and the thin elastic inner layer left to protect the brain from injury. Adhesions. The compressed brain may then be padded to the same degree as when the dura is completely opened but the decompression will occur more slowly. In case of high excision of the dura is carried out the piece of outer layer of the brain is used as a flap to transplant to close the defect. L. M. D. M. D.

SPINAL CORD AND ITS COVERINGS

Roberts and Banerjee. Section of the Anterior T. of the Spinal Cord. C. O. D. M. O. P. T. Te. Inique. (5) T. D. D. N. T. I. I. M. L. D. T. M. T. C. H. Q. E. P. T. J. D. I. 9. 9.

Ch. lot my nt rrupts the pain and temperature of the spinal cord. The pain and temperature fibers are destroyed by the posterior root and cross almost immediately to form the anterolateral tract. The fibers of the cord on a level about four to six inches high. Therefore section of the lateral thalamus acts on the fifth spinal segment. The use of anesthesia only below the ninth segment.

On account of the difficulty of sectioning the entire spinal cord, the following observations are made. The sensory roots of the spinal cord are the upper limb varies from the knee to the umbilicus. Above the level of anesthesia the sensory fibers pass above the lateral root on normal. The pain fibers are ascending and peripheral to the periphery of the cord (Dejerine). Hence the upper roots of the fibers are sensory and the lower roots are motor.

The lower limb or the lower part of the abdomen. Fr. Z. recommends the fifth or sixth dorsal segment. The fifth or sixth dorsal segment is the best for agnathic pains. The authors recommend the first and second dorsal segments. Such a high section is complete. Causes no venous. When it is incomplete the extension of the iliac crest is the umbilicus. Ch. I. T. M. easiness in the upper dorsal region because of the malposition of the thoracic of the spinal cord in this area. With the patient in the Frazier position the lateral half of the eighth cervical segment is exposed. The patient is placed on the dorsal table. It is not known whether the operation is particularly dangerous to the circulation.

On section of the anterior lateral tract, the shape of a comma. The posterior root of the lower extremities. It lies in front of the crossed pyramidal tract with the Gowers tract and the lateral column. The dorsal segment of the lateal h. b. d. f. a. s. t. on fiber. It is only the bundle of terminals slightly with the crossed pyramidal tract.

Ch.otomy is indicated to relieve the pain of organ congestion due to inoperable or recurrent cancer.

tabetic gastric crises kraurosis of the vulva painful sequelæ of spinal wounds and causalgias of the lower extremities which have resisted medical or surgical therapy It is contra indicated in the cases of psychopathic patients morphinomaniacs and cases of peripheral and body pains of mental origin Generally the operation has been done only for the relief of pains in the subdiaphragmatic part of the body When the pain is unilateral the chordotomy should be performed on the opposite side For the relief of median or bilateral pain a bilateral chordotomy is necessary In bilateral section Frazier makes each incision at different levels 2 cm apart in order to preserve the solidity of the cord but the authors have often left no space between the sections with out untoward results

Inhalation or rectal anesthesia induced with ether is preferred by the authors but De Martel uses local anesthesia In addition to general or local anesthesia some surgeons apply a tampon of 10 per cent stovaine just above the site of section to block all disagreeable reflexes As a rule the patient is placed in ventral decubitus with a head support to release the thorax and neck De Martel however operates with the patient seated because in this position there is complete respiratory freedom bleeding is less and the blood escapes from the lower end of the wound Abundant loss of spinal fluid causes no appreciable trouble

The seventh cervical spinous process is not an absolute landmark as the sixth cervical and first dorsal may be the most prominent The exact level of the chordotomy is unimportant The incision is made over three spinous processes The latter are then freed to the base sectioned and turned upward as a flap or removed temporarily or permanently Removal of the laminae of two vertebrae gives sufficient exposure The epidural fat is divided in the midline and pushed to each side Perfect hæmostasis is essential The dura mater well exposed and dry is split the entire length of the wound In one method the pia arachnoid is left intact so that the spinal fluid under it acts as a magnifying lens and the cord dentate ligament and nerve roots float in the fluid De Martel grasps the dentate ligament across the arachnoid to pivot and incise the lateral cord In another method the meninges are incised and retracted by means of threads passed through the borders The spinal fluid escapes The surgeon strands on the side opposite the cord section

After the lateral cord is well freed a tooth of the dentate ligament is grasped by forceps and loosened from the dura Traction on the dentate ligament (the base of which is firmly attached to the cord) pivots the cord so that the anterolateral surface becomes plainly visible When cord rotation is faulty there is danger of sectioning the pyramidal tracts If the dentate ligament tears from the cord or is poorly developed the cord is best rotated by grasping the pia mater directly by harpooning the cord at the lateral border with a minute crochet needle the two dentate ligament teeth having been freed if

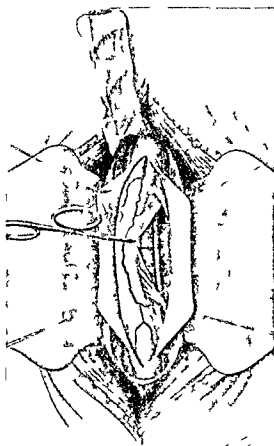


FIG. 1. Rotation of the spinal cord by traction on the dentate ligament The dotted line indicates the level of the superficial section of the cord

possible Displacement and rotation of the cord should be done with gentleness and extreme care

The landmark for the section is the anterior roots After the escape of the spinal fluid these hug the cord and are difficult to see They may be caught in the clamp and not observed until released or if slender and short may be invisible If they are not found at the cord they should be sought at the dural exit and retraced to the cord

With a small oculist's tenotome puncture and incision of the pia mater are done from the anterior roots to the dentate ligament Through this incision the special triangular knife is introduced To make the section correctly as regards length and depth appears simple but is extremely difficult A good section has the shape of a triangle with a base of 3 mm and a height of 2.5 mm The knife must not be passed too far backward or forward A misplaced section causes no or almost no analgesia and is apt to produce serious pyramidal injury

The first essential is an accurate surface incision The posterior end should be halfway between the posterior and anterior roots at the dentate ligament and the anterior end should reach or even pass the anterior roots For good orientation the degree of cord rotation must be estimated

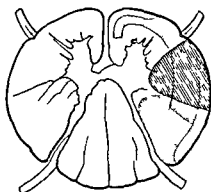


Fig. A. Section of the spinal cord.

The effect of cutting the gray matter of the horn is unknown. To avoid pyramidal tract injury the surgeon tends to cut too far forward (harmless in itself) and not enough backward. For a good result the pyramidal tract should be grazed even slightly cut because of the intermingling of the fibers for short distance. The authors divide the tract with too small a section and then make an examination to see if the sections are healthy. Anterior roots letting the cord fall into place and not touching posterior end of the section. An incision on the cord not gap is not deep enough. There is no objection to repassing the knife. To guide the section Frazer passes a suitably sized curved needle into the dorsal from the dentate ligament then into the root and section the cord with the concavity of the needle with a small curved bistoury.

In the closure of the spinal canal the author generally replaces the peduncles. If good hemostasis has been obtained a drainage is necessary.

After the operation the patient lies flat on his back. A temperature of 37.5° for the first forty-eight hours. The sutures are removed on the tenth day. The patient is allowed to get up on the tenth day. For from three to eight days complete rest is often made of the stricture on the pangs in the waist and the back. The effect usually requires morphine and aspirin probably due to operative trauma to the cord. For the prevention of Leighton adhesions gentle massage of the operation and possibly a posterior radicalotomy at the site of the chordotomy.

In nearly all cases there is a urinary retention for from two to eight days and occasionally the repeated catheterization necessary causes infection of the bladder. In rare cases urinary incontinence has occurred. Trophic lesions of the sloughs which are fairly frequent complications are due directly to the chordotomy as is evident from the multiplicity and site (scum, heel, trochanter, calf, etc.). The cicatrization slowly and unquestionably renders the prognosis less favorable. In one case of the author's a subcutaneous abscess of pus fluid occurred. These complications are classified as minor without pyramidal signs and as pyramidal without appreciable motor signs arise from lesions of the pyramidal tract

either from too posterior a section or small centers of necrosis due to interruption of radiating vessels without section of the tract. When pyramidal signs are absent the functional recovery is generally rapid.

Chordotomy always leads to extreme muscular hypotony. This is most marked in the lower limbs but is not enough to relieve contractures. The operation is successful in itself but because of the patient's general condition. In cases of cancer the early mortality is 5 per cent. In late cases the operation does not seem to hasten or retard death. In non-cancerous cases the early mortality is 6 per cent.

Chordotomy undoubtedly favors urinary troubles and may hasten death if the patient's resistance to infection is low but when it is successful it assures a substantial absolute and definite relief from pain. The result should be done unhesitatingly in cases of cancer. After incorrect operations the relief may be negative or incomplete. In certain unexplained cases the authors have noted very definite anasthesia to pain. This is a simple disturbance of temperature sensation. Chordotomy causes no change of tactile sensibility or sense of position. Hebert's superior to posterior radicalotomy has established its position.

W. FR. C. BURNETT, M.D.

SYMPATHETIC NERVES

M. T. E. G. The Physiology of Muscle Innervation of the Sympathetic System. *J. B. & J. I.* 5, 98, 8.

Following a brief review of the work and theories of Hunter and Ryle the author discusses the possible mechanisms of muscle tone during the myotatic effect of Sherrington and Liddell as the accepted position. He states that there is surely a sympathetic nervous supply to at least some if not all of the muscle fibers both red and pale but the exact nature of the role it plays is not known. If we accept the theory that tonus and the exaggerated tetanus seen in spasticity are mediated through the somatic nervous system the question arises as to what role the sympathetic fibers play in muscle tonus and hypotonia. In the improvement occurs in certain cases of spasticity after division of the sympathetic nervous supply to the part. The observations of Orbeli and his pupils seem at least to suggest an answer.

Orbeli found that if skeletal muscle of the frog is stimulated rhythmically through its somatic nerve the tetanic contraction is then while the sympathetic nervous stimulation is continued the sympathetic innervation to the muscle is also stimulated and the contractions improve in height. Therefore the sympathetic stimulation has in some way affected the muscle causing it to perform better than before the sympathetic was stimulated. This effect was shown to be independent of the circulation. The fact that it usually some hours delayed suggests a chemical action in the muscle resembling the effect of the same innervation in the heart. If this assumption

tion is correct the removal of the sympathetic nervous supply to a muscle which is spastic might occasion an improved state of metabolism in which the tonus ceases to be exaggerated

GILBERT C. ANDERSON, M.D.

Kuntz A The Distribution of the Sympathetic Ramuli to the Brachial Plexus Its Relation to Sympathectomy Affecting the Upper Extremity *Arch Surg* 1927 VI 871

Extirpation of the stellate ganglion alone or section of the gray rami connecting it with the brachial plexus for vasomotor denervation has failed in most cases to eliminate completely the sympathetic nerves of the upper extremity

The author reports further studies made in an attempt to explain this failure. Attention was directed particularly to an inconstant intrathoracic ramus that connects the first and second thoracic nerves as a possible pathway through which sympathetic fibers may connect the trunk below the stellate ganglion with the brachial plexus through the first thoracic nerve

The chief sources of sympathetic fibers to the upper extremity are the middle and stellate ganglia. The former is often absent in which case the stellate ganglion is usually connected by gray rami to all of the nerves from the sixth cervical to the second thoracic and a white ramus from the first to the stellate ganglion

Frequently an intrathoracic ramus of the second joins the first thoracic nerve. In forty eight cadavers examined by the author such a ramus was present bilaterally in 44 per cent and unilaterally in 19 per cent. Considerable variation was noted in its size, location and connections. In some cases there were branches from it directly to the stellate ganglion. There were always the gray and white rami from the sympathetic ganglion or trunk to the second thoracic nerve

Microscopic study of this intrathoracic ramus joining the first and second thoracic nerves showed chiefly small caliber fibers with thin myelin sheath or absence of myelin which are characteristic of sympathetic fibers. Recent studies by various investigators on the innervation of the arteries of the extremities in mammals show that sympathetic fibers are carried peripherally in the larger nerve trunk and join the arteries at intervals along their course. Few if any extend peripherally along the walls of the vessel

From these data the author concludes that extirpation of the stellate ganglion alone or section of the gray rami connecting this ganglion with the brachial plexus is inadequate to denervate the blood vessels of sympathetic fibers completely. To insure such denervation it is necessary not only to section the gray rami connecting the middle and stellate ganglia with the brachial plexus but also to extirpate the stellate ganglion and either cut the sympathetic trunk below the level of the second thoracic or sever the communicating rami of the trunk with the sec-

ond and all peripheral rami arising between this level and the stellate ganglion. The anatomy of this region is shown in three drawings

ALBERT S. CRAWFORD, M.D.

MISCELLANEOUS

Quick D and Cutler M Neurogenic Sarcoma *Am Surg* 1927 LXXXI 810

The tumor commonly designated as fibrosarcoma, spindle cell sarcoma or fascial sarcoma occurs most frequently in the subcutaneous and intermuscular tissues of the arm, leg, popliteal space and chest wall. Ewing has called this neoplasm neurogenic sarcoma. As it is comparatively rare the average surgeon does not encounter it with sufficient frequency to be familiar with its true nature. Because of its benign appearance it is often removed by simple excision. The result is prompt recurrence followed by repeated excisions and recurrences. The condition becomes progressively more extensive and death often results from pulmonary metastasis.

The authors report is based upon seventy five cases treated in the Memorial Hospital, Toronto during the past fifteen years. The tumors are divided into three groups according to their malignancy as judged from their histological structure. The patients ranged in age from six to seventy two years. The authors state that a single injury does not seem to be a cause but chronic irritation or repeated trauma may be of etiological importance. In the great majority of the cases the tumor occurred in one of the extremities or the chest wall but in some it developed in the neck, buttock, axilla, groin or scalp.

Of five patients with a tumor of the upper extremity who were subjected to amputation, two are alive after five and eight years respectively and three died of pulmonary metastasis soon after the operation. Of nine patients with similar tumors who were treated by radiation or local excision of the growth or both, five are well from five to nine years after the operation and three are dead. The three who died developed pulmonary metastases.

Of fifteen patients with a tumor of the thigh, thirteen are dead. Many of the failures in this group must be attributed to the advanced stage of the disease. Amputation was attempted in one case but the others were treated by excision alone or excision followed by the implantation of bare tubes. Inoperable cases were treated mainly by exposure and the insertion of bare tubes but in several instances zinc chloride paste was used alone or combined with radiation.

Of five patients with tumor of the neck, two died, two had good palliative results and one is free from disease fifteen months after combined excision and radiation. The two who died had advanced recurrent tumors which were treated by small doses of external radiation. Two advanced inoperable tumors of the neck are being held in check by high voltage X-ray irradiation and radium packs. This

treatment was begun two years ago and both of the patients are in excellent general condition.

Of nine patients with a tumor of the chest wall five are alive and four are dead. Two of these who are dead lived for five years after the beginning of treatment. I died of pulmonary metastasis. Of the five who are alive the growth arrested in three and had disappeared in two.

Pulmonary metastases occurred fifteen (60 per cent) of the twenty-five cases. A few left the relation has ascertained between the cellular nature of the tumor and their tendency to form metastases. The microscopic structure of the neoplasm may serve as a favorable indication to the treatment and prognosis.

In one of the cases reviewed the effect of the most cellular variety of tumor, the embryonic rhabdomyosarcoma, to malignant degeneration. Neoplastic content are very different in all the responding locally, after months of intensive treatment. Occasionally, however, they are confined to the tumor. The author reports two cases in which the neoplasm disappeared rapidly under radiation. Both tumors presented the clinical features of embryonic sarcoma but histological

examination showed one to be a very cellular malignant round and polyhedral cell tumor and the other to be a lymphosarcoma. A small dose of radiation such as a single subcutaneous dose of the X-rays may therefore be a valuable diagnostic aid.

In cases of neurogenic sarcoma of the extremities the decision between amputation on the one hand and excision and radiation on the other is at times most difficult. Of ten patients with such tumors who were subjected to amputation five died of pulmonary metastasis and five are well. Whereas of fifteen who were treated by local excision and radiation seven are alive after from two to nine years and eight are dead. The result of amputation appears to depend mainly on the degree of malignancy of the tumor.

The authors conclude that the treatment of choice is preoperative radiation and wide excision followed by prompt and adequate postoperative radiation.

The conclusions and the treatment are reviewed in detail. An analysis of the failures indicates that many of them were due to the highly malignant nature of the tumors at the advanced stage of the condition or inadequacy of the treatment employed.

G. B. CAMPBELL, M.D.

SURGERY OF THE CHEST

CHEST WALL AND BREAST

Anderson J. Surgical Diathermy in Breast Cancer. The Application of the Arc Electrode or Cutting Current to the Radical Operation. *Brit J Surg* 19 8 vi 500

In the treatment of cancer of the breast Anderson uses surgical diathermy in the form of the arc electrode. The apparatus and the technique are described. The small machine ordinarily used for medical diathermy is sufficient. A fine arc appears between the electrode and the skin and the tissue is cleft to a depth varying from a fine line to 1 cm according to the amount of current used and the tissue resistance. For dissection of the axilla a scalpel is necessary.

The author uses the arc electrode also for the removal of various tumors of the skin and mucous membrane. Because of the inflammability of its vapor ether cannot be employed in the operating room.

The advantages claimed for the use of the arc electrode are that it seals the lymphatics thereby preventing mechanical dissemination of the cancer cells; it gives better hemostasis with a saving of blood; it catenates and time; it sterilizes the wound; it is associated with less pain and shock than other methods; it is followed by cleaner and more satisfactory healing; and it is less apt to be followed by recurrence.

Histological sections of removed tissues show little alteration of the cell structure adjacent to the line of desiccation. NATHAN N. CROHN M.D.

TRACHEA LUNGS AND PLEURA

Archibald E. and Brown A. L. Cough Its Action on Material in the Tracheobronchial Tract. Experimental Study. *Arch Surg* 19 8 xvi 322

The authors state that the forced expiratory effort of coughing is immediately preceded or followed by a markedly increased inspiration. Therefore by the inspiratory rush of air and the expiratory effort coughing may spread material in the bronchi deeper into the pulmonary tree instead of expelling it.

In experiments on cats in which iodized oil alone and mixed with sputum and tenacious masses of sputum impregnated with the oil were injected, the authors found that in the animals which coughed the oil was carried deeper into the lung tissue and remained much longer than in the animals which did not cough. It remained even longer when the trachea was compressed during the cough. The tenacious masses were carried no further than the large bronchi and were soon expelled.

These findings suggest that in certain surgical operations coughing may be more dangerous than beneficial. Coughing expels most of the fluid material aspirated into the trachea and larger bronchi but forces some of it into the alveolar spaces.

CHESTER L. CREAN M.D.

Lerche W. Infections of the Lymph Nodes of the Bronchial Tree. *Arch Surg* 1928 vi 338

The lymphatics of the lungs are found in the walls of the bronchi along the arteries and veins and in the pleura. The flow of lymph in the lung and the larger part of the pleura is toward the hilum. Valves in the connecting vessels between the pleural and deep lymphatics point to the pleura thereby preventing the passage of an injection mass into the deeper tissues. The lymph from the lungs, the bronchi, the lower part of the trachea and the larger part of the pleura is received by the tracheobronchial nodes.

Microorganisms may be carried to the tracheobronchial nodes by the lymphatics following their inhalation into the lower respiratory passages or their transportation to the lymphatics by way of the blood stream. They have been found in these nodes when there was no other focus of infection in the lungs.

When microorganisms settle in a lymph node in the lung they may be destroyed *in situ* or remain latent or they may set up an inflammatory reaction followed by healing with or without calcification or they may lead to suppuration of the node into a bronchus or the parenchyma of the lung with the formation of an abscess.

Particularly in childhood swollen tracheobronchial lymph nodes—tuberculous or non-tuberculous—may compress the bronchi. In the presence of infection such compression may lead to bronchiectasis.

The bronchopulmonary nodes may also be potent factors in the causation of bronchiectasis in children. When these nodes are enlarged and inflamed and there is an associated peradenitis with oedema the bronchi may be compressed directly by the nodes or by the fibrous tissue resulting from the acute peradenitis. Illustrative cases are reported.

For advanced cases of abscess of the tracheobronchial spaces the author advises puncture through the bronchoscope. CHESTER L. CREAN M.D.

Pickhardt O. C. Unresolved Pneumonia A Surgical Analysis. *Arch Surg* 1928 xvi 192

In an analysis of fifty two cases referred for X-ray examination as unresolved pneumonia the author found that only six were correctly diagnosed. He states that as a rule the diagnosis of

unresolved pneumonia is an admission of failure to determine the true nature of the lesion. He has tabulated the various conditions to which this term was applied in the cases reviewed and includes in his article roentgenograms of true cases of unresolved pneumonia. He calls attention to the peribronchial thickening which is the result in typical cases. His conclusions are as follows:

1. The primary unresolved pneumonia is a rare condition.

2. In the rare positive case a definite localized peribronchial infiltration visible in the roentgenogram develops later.

3. Approximately 36.5 per cent of pulmonary conditions diagnosed as unresolved pneumonia are frankly surgical conditions.

4. The thoracic surgeon should be consulted more frequently whenever pneumonia does not resolve promptly and properly.

RALPH B. BETTMAN, M.D.

Crowe S. J. and Scarff J. E. Experiment I: Abscesses of the Lung in the Dog. *J. H. S. G.* 9:8.

Allan D. S. The Etiology of Abscess of the Lung. Experimental and Clinical Studies. *J. H. S. G.* 9:8.

Crowe and Scarff state that on the basis of 350 tonsillectomies performed at the Johns Hopkins Hospital, Baltimore, the precautions to prevent the aspiration of infectious material and the use of a single postoperative abscess of the lung they have come to the conclusion that postoperative pulmonary abscess is due to aspiration rather than to the lobe at once infected embolus.

The precautions taken in the cases reviewed are the following:

1. Morphine and atropine were given before the operation.

2. The anesthesia was induced by a trained anesthetist.

3. Throughout the operation the patient's head was kept at least 15 inches lower than his feet.

4. The allowing of free drainage during the period of anesthesia.

5. The mucus and blood were removed from the pharynx by careful suction.

6. All bleeding vessels were carefully ligated.

In experiment on dogs in which plugs of cotton saturated with fresh scrapings from pyorrhea cavities from clinical cases were introduced into the main bronchus of the lobe through a bronchoscope, Crowe and Scarff were able to produce lung abscesses in eight instances. The abscesses were confined to a single lobe and were associated with general pneumonia. They were characterized by necrosis of a cavity formation.

In the other dogs, pulmonary abscesses resulted from a sinusitis with a constant foul smelling discharge from the nose which was produced by placing cotton pledges contaminated with pyorrhea scrapings into the frontal sinuses.

In the cases of fifty dogs in which pledgets of cotton infected with cultures of pneumococci, staphylococci, streptococci, colon bacilli and various other bacteria instead of pyorrhea scrapings were introduced into the main bronchus, the results were negative or a diffuse pneumonitis developed.

Allen discusses the production of pulmonary abscess by way of the air passage (aspiration) and by way of the blood stream (emboli).

In experiments to produce abscesses of the lung by aspiration, he injected pus obtained from cases of chronic non-tuberculous abscess of the lung into the trachea of fifteen rats. None of the animals developed either a pulmonary abscess or pneumonia.

Believing that bacteria might have been killed by hilling, he then injected arm pus immediately after it was coughed up into the trachea of eighteen dogs. In three rabbits, two of the dogs, but none of the rabbits developed abscesses of the lung. The abscesses were multiple but so small as to be seen only on microscopic examination.

They resembled the early abscesses of the lung in man. As in clinical cases, rather than as a definite latent period between the aspiration of the infected material and the development of the symptoms. It was noted that the abscesses developed in portions of the lung farthest from the main bronchus that is in places where pus was most likely to become trapped.

In the case of seven dogs, plugs of infected tonsil tissue or blood were blown into the bronchi by means of compressed air. No lung abscess developed and necropsy showed that the plug had been expelled.

In three dogs, pusulent material was introduced into a lobe of the lung and the main bronchus then ligated. The dogs developed multiple abscesses and pneumonia. Four control dogs in which the bronchus was ligated without the previous introduction of pusulent material did not have these complications.

In the experiments, millimeter sized emboli introduced into the bronchus through the bronchoscope with the barbs pointing toward the trachea but even these foreign bodies were coughed up.

Attempts to produce lung abscesses in dogs by the liberation of septic emboli of cord to the technique of Cutler gave positive results.

In conclusion the author says: My coworkers and I do not wish to doubt the possibility that abscesses of the lung may be due to the lodgment of infectious emboli in the radicals of the pulmonary artery. We have produced such abscesses experimentally. We have, however, hoped to point out and to prove experimentally that the route of entry of infectious material into the lung may be through the passages of the lung infection into the main pulmonary artery may produce a single abscess of the lung, likewise septic material introduced into the pulmonary artery may produce multiple abscesses of the lung. The principal requisites in these cases are that the infectious material is not allowed to escape from the lung.

RALPH B. BETTMAN, M.D.

**Kernan J D Abscess of the Lung Relieved by
Bronchoscopy Report of Cases *Arch Surg*
1928 xvi 215**

In a series of 103 cases of abscess of the lung reviewed by Kernan the common etiological factors included tonsillectomy, pneumonia and operations other than tonsillectomy. In 20 cases the cause was not apparent. Cases in which foreign bodies were responsible were not included unless the foreign body had been present for a long period of years.

Of the 103 patients 68 were treated by bronchoscopy. Usually at least 3 bronchoscopies were required in each case as were generally necessary to accustom the patient to the instrument. Of the 68 patients so treated 31 were relieved of the cough, expectoration and fever and were considered cured but 2 of these died later from another cause. Fifteen others were benefited, 9 could not be traced, 9 are dead and 4 are still under treatment. Of 8 patients who were treated surgically 3 were cured, 2 died and 3 could not be traced.

In 27 of the cases treated by bronchoscopy the abscess followed tonsillectomy. In 15 of these a cure was obtained. In 9 of the 15 which were cured the recovery followed one or two bronchoscopies. In the 27 cases excluding those subsequently operated upon there were 3 deaths, 1 of which was the result of embolism and directly attributable to the treatment.

Pulmonary abscesses following tonsillectomy respond best to bronchoscopy. The treatment is most successful if it is begun early while the abscess wall is elastic and able to contract but is always indicated however unfavorable the X-ray appearance since gratifying results occasionally follow even in cases with an apparently poor prognosis.

The author discusses seven cases of pulmonary abscess following tonsillectomy and one case of abscess developing years after exposure to gas during the war which was clinically cured after two bronchoscopies in spite of the long duration of the condition. He reports also an abscess of six months duration which developed after pneumonia and took the form of a mass of scar tissue with fistulous tracts. In this case a cure was effected after months of bronchoscopic treatment. **BURTON CLARK JR M D**

Eggers C and Kernan J D Acute Pulmonary Suppuration The Selective Action of Artificial Pneumothorax in the Treatment of This Disease *Arch Surg* 1918 xvi 279

Artificial pneumothorax has received scant attention in the treatment of acute non-tuberculous intra-pulmonary suppuration and opinions as to its value vary greatly. The authors report a case in which it gave striking results. The patient was a six-year-old girl who developed an abscess of the lower lobe of the right lung a few days after a tonsillectomy performed under general anesthesia seven weeks before her admission to the hospital. At the time of her admission she was thin, anæmic and feverish and coughing up quantities of pus.

In spite of two weeks of bronchoscopic treatment she continued to fail. At the end of that time a rib was resected under local anesthesia and air admitted to the pleural cavity through punctures made in an ineffectual attempt to strike pus. Following this procedure roentgenograms showed collapse of the lung. This collapse was limited chiefly to the lower lobe indicating apparently that the upper pleural cavity was protected by adhesions.

Immediately after the operation the patient began to improve. There was a rapid diminution of the cough and expectoration with an associated gain in weight. After two weeks the temperature remained normal. A month later bronchoscopy and X-ray examination demonstrated a small contracted lower lobe with dilated bronchi. The other lobes had expanded to fill the chest completely. The patient has remained well.

Pneumothorax permits collapse of the lung with obliteration of the suppurative focus. In the contracted lung circulation is diminished and fibrosis sets in tending to maintain collapse and favor healing. The two important factors for the success of the procedure seem to be a free bronchial outlet and a non-adherent lung. Therefore the treatment must be given early. **BURTON CLARK JR M D**

Whittemore W and Balboni G M Non Tuberculous Bronchopulmonary Suppurative Lesions Results of Treatment by Artificial Pneumothorax *Arch Surg* 1928 xvi 228

The authors review the end results of artificial pneumothorax in 245 cases of non-tuberculous bronchopulmonary suppurative lesions—222 cases reported in the literature during the last twenty-four years and 23 cases of their own.

In the authors' series there were 18 cases of lung abscess and 5 of bronchiectasis. Of the patients with lung abscess 2 were cured and 2 were benefited temporarily. One of the latter died within a year from bronchopneumonia. Partial pneumothorax brought about improvement of all symptoms but fifteen months after the suspension of the treatment the patient died of embolism. There were three fatal hæmorrhages during the treatment in these cases the pneumothorax was incomplete because of adhesions. In 2 cases the treatment caused no improvement and in 3 the pneumothorax was unsatisfactory. Five patients developed empyema and were operated upon. Three of these were cured, 1 is still under treatment and 1 died.

Of the 5 cases of bronchiectasis in the authors' series pneumothorax was satisfactory in 3. In 1 of these 3 it resulted in cure. In the 2 others it caused improvement but 1 of the patients died later following an operation for empyema. In the authors' opinion artificial pneumothorax offers small chance of cure in bronchiectasis.

The cases reported in the literature included 129 of abscess of the lung and 93 of bronchiectasis.

Of the 129 cases of abscess of the lung 68 were cured. Twelve of the patients were not benefited

or less acute process with a resulting condition similar to lobular or lobar pneumonia. In this type resorption may be almost complete in time but caseation, cavitation and fatal progression may occur. However if the resistance is strong the acute form with cavity formation may turn into the chronic productive type.

The productive form suggests a high resistance. It leads to the formation of typical tubercles with out a fluid exudate. Cavities may occur but coincident with their formation there is the production of fibrous tissue with a tendency toward healing. The exudative form usually represents an acute process with massive or virulent infection and poor resistance. The productive type is thought to be the result of infection by a few bacilli in the presence of high resistance.

A distinction between these two types may be made in part from the clinical picture and in part and more accurately from the X ray picture. Both forms may be pre sent simultaneously or one form may change to the other.

The prognosis depends upon the resistance. The exudative form represents activity and a poor defense while the productive form indicates chronicity and a good defense. Surgery is to be considered only if there is good resistance evidenced by the clinical course of the condition the constitutional symptoms and the findings of the physical and X ray examinations.

The type of case most favorable for operation is the good chronic case. In incipient and far advanced cases surgery is not to be considered. The other lung must be sufficiently sound to carry on respiration alone. There must be signs of a uni laterally contracted chest, a falling in of rib spaces and subclavicular fossae, a pulling up of the diaphragm, a pulling of the trachea heart and mediastinum toward the affected side and a narrowing of the intercostal spaces. In this type of case contraction has already occurred as far as possible and further collapse requires the partial removal of ribs. When collapse and healing are complete only a small solid fibrous lung remains. This result is brought about after operation because the formation of fibrous tissue is stimulated, lymph flow and toxic absorption are retarded and the blood circulation is hindered.

In doubtful cases it is better to try lesser procedures such as pneumothorax or phrenicotomy. If the patient responds well to one of these measures he may later be suitable for thoracoplasty. The author believes that acute cases should never be operated upon.

The article contains three tables covering 140 cases. In 117 thoracoplasty was performed. The mortality within the first two months after the operation was 7.7 per cent and the mortality from later progress of the disease 19.3 per cent. A cure resulted in 33 per cent of the case and marked improvement in 32 per cent.

FRANK B. BERRY, M.D.

Table J. The Action of Phrenicectomy on Tuberculous Lesions of the Upper Lobe (Action de la phrenectomie sur des lésions tuberculeuses du lobe supérieur) *Pull et niem Soc méd d hop de Par 1927* Vol 1636

Table reports two cases in which phrenicectomy appeared to interrupt the evolution of tuberculous lesions of the upper lobe. He does not believe the result can be considered a coincidence as both were cases of tuberculosis with cavities showing a tendency to extend and the patients were obliged to work for their living and hence were unable to take the diet and rest treatment.

After failure of pneumothorax a thoracotomy seemed indicated. The improvement obtained with phrenicectomy was quick and lasting. Two years later one of the patients had ceased coughing and the other was able to support herself and child.

In the author's opinion thoracoplasty should be reserved for cases in which the symptoms are immediately threatening. Phrenicectomy makes it possible to judge the function of the other lung and to perform costal resection later with a greater sense of security. Sometimes as in the cases reported the improvement following phrenicectomy is so great that no further intervention is necessary.

The favorable action of phrenicectomy on apical lesions cannot be entirely explained by the rise of the diaphragm. The operation acts also by provoking a retractile pulmonary sclerosis. While the sclerotic process had already begun in Table's cases before the treatment its increase after the operation suggested that the phrenicectomy favored the development of new fibrous networks. Exeresis of the phrenic nerve therefore finds its best indications in subacute forms of fibrous tuberculosis especially those with a spontaneous tendency toward retractile sclerosis in which pneumothorax is impossible or useless because of extensive pleural adhesions.

ANNA L. PACE

Kirklin B. R. and Peterson R. The Roentgenological Manifestations of Primary Carcinoma of the Lung *J Roentgenol 1928* Vol 20

The authors state that previous reports on pulmonary carcinoma have dealt largely with the late stages of the disease complicated by massive tumor infection or the presence of fluid. The early cases fall into two groups the bronchial (which are not discussed here) and parenchymal. Parenchymal carcinoma is usually adenocarcinoma and tends to run a rapid and at first symptomless course.

Three roentgenological types are described—the nodular the lobar and the infiltrating. The nodular type which is the most common consists of an irregularly rounded infiltrating nodule lying completely in the pulmonary field and usually not involving the periphery. The lobar type is of homogeneous density occupies an anatomical lobe and shows an infiltrating edge. In the infiltrating type there is increased density of the bronchial tree radiating from the hilum.

Farr C E and Levine M I Empyema in Children A Preliminary Report *Surg Gynec & Obst* 1928 xlii 9

The authors review 371 cases of empyema in children with regard to the age of the patient the year in which the condition developed and the organism responsible for the infection. Empyema is a secondary process. In 92 per cent of the cases reviewed it followed pneumonia.

The incidence of empyema probably bears a relationship to the prevalence of pneumonia and the virulence of the organism. The mortality is very high in infancy and then drops rapidly until the age of seven years. Age seems to be the chief factor in the prognosis but the type of the infection the year in which it develops and the virulence of the organism are also of great importance.

The method of treatment used—whether it is intercostal incision rib resection open drainage closed drainage the use of Dakin's solution or simple drainage—seems to have little influence on the prognosis. In choosing the time for operation the surgeon should be guided by the nature of the pus and the patient's condition.

Recurrences seldom result if free drainage is obtained and maintained.

Death from empyema in the cases of children is almost always due to general debility brought on by the previous illness or is the result of existing complications rather than to the empyema itself.

J FRANK DOUGHTY MD

Janes R Tuberculous Empyema *Canadian M Ass J* 1928 xiii 6

Janes states that the prognosis of tuberculous empyema is always grave and the postoperative mortality high. From the standpoint of treatment the cases fall into three groups: (1) those of empyema in a closed cavity without secondary infection; (2) those of empyema in a closed cavity with secondary infection; and (3) those complicated by a bronchial fistula a chest wall sinus or both.

Sterile purulent exudates in a closed cavity should be treated as a pleural effusion if the lung expands when the fluid is withdrawn. When the lung is fixed in collapse thoracoplasty should be performed.

Repeated aspirations may lead to secondary infections. Open drainage should never be established in sterile cases. If a bronchial fistula or empyema necessitatis develops thoracoplasty should be done at once before the occurrence of secondary infection.

When secondary infection is already present the problem is always extremely difficult. Efficient drainage should be established preferably by the closed method and irrigation of the cavity should be undertaken. Dakin's solution is contra indicated as it is too irritating. In the next step of the treatment a multiple stage complete extrapleural thoracoplasty must be performed. In this way a large cavity may be converted into a small shallow one

with only a scanty discharge and the patient restored to comparatively good health. In favorable cases the shallow cavity may be later unroofed packed with iodoform gauze and treated with quartz light and the resulting defect closed with a pedicled skin graft.

FRANK B BERRY MD

ESOPHAGUS AND MEDIASTINUM

Smith L A Diverticula of the Thoracic Esophagus *Am J Roigenol* 19 8 xiv 2

Prior to the use of the X ray diverticula of the thoracic esophagus were found only at autopsy. Carman collected fourteen cases seen in the period from 1892 to 1919 in all except one of which the diagnosis was made at X ray examination. In the period between 1919 and 1926 the author collected twenty seven cases and in this article he adds nine new ones. In three of the latter the sacculations were multiple.

These cases appear to indicate that the condition is probably rather frequent but is often not diagnosed because of the absence of symptoms. In only three of the cases reported by Smith were there any symptoms suggesting a pathological condition in the esophagus and in only one was there any evidence whatever of cardiospasm which has been considered an etiological factor.

Smith reports also two cases of non traumatic para esophageal hernia of the stomach associated with esophageal diverticula.

CHARLES H HEACOCK MD

Mosher H P Findings with the Barium Bougie in Cardiospasm *Ann Otol Rh of & L ryngol* 1927 x xvi 1124

Mosher is inclined to the opinion that cardiospasm is a stricture which is hardly more than an inflammatory gluing of the deep longitudinal folds of the lower part of the esophagus favored by accentuation of the normal twist of the tube in this locality. For the study of this condition he has devised a barium bougie a rubber balloon filled with barium the lower end of which has a metal cap about a centimeter wide. This bougie is introduced into the esophagus by means of a whale bone staff and the esophagus then examined with the roentgen ray. Retching occurs only when the bougie rests in the lower esophagus; it does not occur when half of the bag is in the stomach and the other half in the esophagus; the correct position when the X ray examination is made. More information can be obtained by this means than by direct observation through the esophagoscope. The author says: For years I have held that an examination at the lower end of the esophagus under local anesthesia and with small tubes amounted to little or nothing.

Six cases in which the barium bougie was used are reported. All showed a tubular narrowing of the terminal portion of the esophagus. The transverse and anteroposterior diameters of the narrowing were

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Repeated aspirations may lead to secondary infections. Open drainage should never be established in sterile cases. If a bronchial fistula or empyema necessitatis develops thoracoplasty should be done at once before the occurrence of secondary infection.

When secondary infection is already present the problem is always extremely difficult. Efficient drainage should be established preferably by the closed method and irrigation of the cavity should be undertaken. Dakin's solution is contra indicated as it is too irritating. In the next step of the treatment a multiple stage complete extrapleural thoracoplasty must be performed. In this way a large cavity may be converted into a small shallow one

with only a scanty discharge and the patient restored to comparatively good health. In favorable cases the shallow cavity may be later unroofed packed with iodoform gauze and treated with quartz light and the resulting defect closed with a pedicled skin graft.

FRANK B BERRY M D

ESOPHAGUS AND MEDIASTINUM

Smith L A Diverticula of the Thoracic Esophagus 1st J Roentgenol 1928 xiv 7

Prior to the use of the X ray diverticula of the thoracic esophagus were found only at autopsy. Carman collected fourteen cases seen in the period from 189 to 1919 in all except one of which the diagnosis was made at X ray examination. In the period between 1919 and 1926 the author collected twenty seven cases and in this article he adds nine new ones. In three of the latter the sacculations were multiple.

These cases appear to indicate that the condition is probably rather frequent but is often not diagnosed because of the absence of symptoms. In only three of the cases reported by Smith were there any symptoms suggesting a pathological condition in the esophagus and in only one was there any evidence whatever of cardiospasm which has been considered an etiological factor.

Smith reports also two cases of non traumatic para esophageal hernia of the stomach associated with esophageal diverticula.

CHARLES H HEACOCK M D

Mosher H P Findings with the Barium Bougie in Cardiospasm 111 *Otol Rhinol & Laryngol* 1927 xxxvi 11 4

Mosher is inclined to the opinion that cardiospasm is a stricture which is hardly more than an inflammatory gluing of the deep longitudinal folds of the lower part of the esophagus favored by accentuation of the normal twist of the tube in this locality. For the study of this condition he has devised a barium bougie a rubber balloon filled with barium the lower end of which has a metal cap about a centimeter wide. This bougie is introduced into the esophagus by means of a whale bone staff and the esophagus then examined with the roentgen ray. Retching occurs only when the bougie rests in the lower esophagus; it does not occur when half of the bag is in the stomach and the other half in the esophagus; the correct position when the X ray examination is made. More information can be obtained by this means than by direct observation through the esophagoscope. The author says: For years I have held that an examination at the lower end of the esophagus under local anesthesia and with small tubes amounted to little or nothing.

Six cases in which the barium bougie was used are reported. All showed a tubular narrowing of the terminal portion of the esophagus. The transverse and anteroposterior diameters of the narrowing were

practically the same in a given case. The diameter of the œsophagus was reduced to between a fourth and three fourths of the normal.

Mosher relates that the narrowing due to a fibrosis of the mucous membrane and fibrous layers of the œsophagus. He came to this conclusion when he noted a very fatal case in the stricted area during the roentgen examination. He states that such a case would not have occurred if the muscular layer had been involved to a great extent. He attributes the fibrosis to a previous infection of the lower part of the thorax or the upper part of the abdomen. It is due to the œsophagus by continuity.

The barium bismuth also helps the lower end of the œsophagus is movable. When the lung tips fall and expand under normal conditions the lower end of the œsophagus is forced to a depth of the body for a distance of 3.4 in. and the normal growth of the phagus to the right is straightened out. A child given there is a total movement of the lower end of the œsophagus—a double motion which may easily be converted into a st.

The treatment of cardiac spasm is dilatation. The barium bismuth has proved of distinct value in relieving the symptoms but as it is capable of delivering only about 5 lb. of upward pressure the use of the fluorine hydrostatic bag may be found necessary.

It has long been known that when the œsophagus is filled with barium up to a certain point—generally to the level of the arch of the aorta—it will dilate itself and then prove that the obstruction at the terminal portion is relatively slight. When patients with cardiac spasm first present themselves for examination the œsophagus is found to be full of fluid. Sometime the gas bubble of the stomach will pass the phagus from below.

Recently the author began to use a Seidlitz powder to empty the stomach filled with barium and found it of considerable aid. The gas generated dilates the œsophagus and makes its outlet stand out more clearly besides hurrying the barium into the stomach. In addition it produces a large gas bubble in the stomach against which the lower end of the barium filled œsophagus stands out very clearly.

ARTHUR O. M.D.

SURGERY OF THE ABDOMEN

ABDOMINAL WALL AND PERITONEUM

Fairbairn J S and Sims T H Pseudomyxoma peritonei Associated with Ruptured Ovarian Cyst and Appendicular Disease *Proc Roy Soc Med Lond* 19 8 xxi 372

Fairbairn and Sims report a case of pseudo myxoma peritonei occurring in a nulliparous married woman forty seven years of age. The symptoms were those of mild intestinal obstruction and dyspnoea and palpitation on exertion. On examination the patient was found to be emaciated and anæmic. The abdomen was distended and showed enlarged veins. The liver dullness was displaced upward. Dullness below the umbilicus and in both flanks was not associated with a fluid thrill. Paracentesis evacuated no fluid but a thick gelatinous material exuded following withdrawal of the trocar. On bimanual examination no swelling was found in the pelvis. A tap on the abdomen communicated a distinct impulse to the fingers in the vagina.

Laparotomy was followed by the extrusion of a large amount of gelatinous fluid. In the right ovary an intact cyst was found above and a ruptured cyst below. Both were excised and appendectomy was done. The appendix was coiled up in such a manner as to resemble a snail's shell. It was firm uniformly covered by gelatinous material and markedly congested. The peritoneum was generally injected and the omentum thickened and covered by adherent masses of the gelatinous material that could not be entirely removed.

The unruptured cyst was a dermoid containing sebaceous material and hair. The ruptured cyst presented the characteristic features of an ovarian cystadenoma. Histological examination showed the usual high cylindrical epithelium with basal nuclei and clear cell protoplasm but with an unusual number of clear droplets in the cells.

The appendix showed evidence of chronic inflammatory changes. The lymphoid tissue had largely disappeared. The cells of the mucosa were in a state of active secretion being swollen clear and in places tufted. The lumen was occupied by a central core of coagulated material undergoing organization with masses of mucus and enmeshed within it blood cells and detached portions of glandular epithelium. The core contained also connective tissue cells with well formed blood vessels. These vessels showed that the core was attached to and vascularized from the wall of the appendix. The epithelial covering of this core was similar to the cylindrical epithelium of the ovarian cystoma.

While no conclusion is drawn as to the relation between the conditions in the appendix and ovary the authors cite the possibility that the enlarge-

ment of the appendix was due to the implantation of active tumor cells from the ovary.

MANUEL E. LICHTENSTEIN M.D.

Waugh G E Congenital Malformations of the Mesentery A Clinical Entity *Br J Surg* 19 8 x 438

Congenital malformations of the mesentery are a definite morbid entity of a chronic type which may be recognized before operation by careful clinical investigation.

The syndromes to which they give rise cannot be explained by any well known abdominal surgical disease nor by any purely functional disability which may be included under the term indigestion.

The most important physical sign is emptiness of the right iliac fossa associated sometimes with asymmetrical enlargement of the abdomen on the left side. These signs are due to the fact that the entire segment of the embryonic mid gut was involved in failure of rotation and fixation after reduction from the umbilical sac.

Röntgen investigation will prove more helpful in confirming the diagnosis when as a routine procedure barium is given by mouth until the shadow is seen in the small intestine and a barium enema then given so that a complete picture of the entire intestinal tract is obtained.

Operative treatment may effect a cure or may reveal a pathological condition for which treatment may be given.

HOWARD A. MCKNIGHT M.D.

MacAuley C Torsion of the Great Omentum A Note on Two Cases *Brit J Surg* 9 8 x 387

In the first of the author's two cases of torsion of the great omentum the pre-operative diagnosis was acute appendicitis and in the second appendicular abscess. In both cases the right portion of the omentum was involved and was adherent to the anterior abdominal wall. Characteristic of the condition was the lightness of the adhesions. The adherence of the omentum to the anterior abdominal wall was responsible for oedema of the parietal peritoneum. In cases with the latter condition and the exit of blood stained peritoneal exudate the possibility of omental torsion should be considered. At operation a pararectal incision is best.

HERMAN H. HUBER M.D.

Grausman P M and Jaffe H L Cystic Lymphangioma of the Greater Omentum *Ill S J* 19 8 lxxvii 66

Following a case report the authors state that they believe cystic lymphangioma to be true

blastomata arising in the greater omentum from undifferentiated mesenchyme which is capable of producing lymphatic vessels by proliferation of lymphatic globules. Many of these newly formed lymphatic vessels become enlarged and cystic because of blockage of the outlets and possibly because they are blind ends. Some of the original lymphatic vessels are also obstructed and show secondary changes such as intubation and proliferation of the endothelium. In the author's opinion the preformed lymphatic system is involved in the tumor growth.

(C. A. COOTMAN)

GASTRO INTESTINAL TRACT

Holme G. W. and Desser R. The Use of Amyl Nitrite as an Antispasmodic in the Roentgen Examination of the Gastrointestinal Tract. *Am J R* 1938 44

The authors restrict the use of the term spasm to deformities of the stomach and duodenum which simulate an organic lesion. The term pylorospasm they use to designate failure of the pylorus to perform its usual function. They state that all spasm probably can be relieved by treatment at a later date but often shows a change of condition or enteric abnormality.

Atropine has been used by us to relax spasm of the gastrointestinal tract. During the past year the authors have employed amyl nitrite instead of atropine in our examination. Amyl nitrite has the advantage of producing an immediate effect on the esophagus and in the upper part of the stomach to return on subsequent date. The fumigation of one teaspoonful inhaled by the patient while lying on the horizontal table and the examination is made as soon as the patient feels the obnoxiousness of the temples lighted zones and a armful held in the mouth until the result has been noted.

Amyl nitrite has been found specifically valuable in the examination of the intestinal type of colon.

(C. R. H. H. C. K. M. D.)

Case J. T. and Boldyreff W. N. The Influence of the Roentgen Ray upon Gastric Secretion. *J K* 1938 44

A preliminary investigation of the influence of the roentgen rays upon gastric secretion was conducted and confirmed. The authors attempted to study the results of the various doses of short wavelength roentgen rays upon both phases of gastric secretion. The first physiological phase is that produced by the appetite and the second or chemical phase is that induced by the action of extra-abundant secretions and absorption of digested food in the pyloric gland.

The physiological phase was studied by dogs with a gastric tube and esophagotomy. Sham feeding for the first few days was employed. For the study of the secretory phase dogs were prepared with an isolated stomach pouch after the method

of Heidenhain. In both phases the quantity of secretion was diminished although the effect was temporary in both cases. There was no alteration in the properties of the juice secreted. The return to normal was slower in the chemical phase than in the physiological phase requiring about eight weeks.

The authors conclude that high voltage deep X-ray treatment acts only upon the functional activity without destroying the vitality of the digestive glands and that any result obtained in the treatment of gastric or duodenal ulcer is likely to be transient.

CHARLES H. HEACOCK, M.D.

Aris L. An Investigation into Defects in the Pyloric Portion of the Stomach. *Acta Med Scand* 1937

The author describes various types of defects in the wall of the pyloric portion of the stomach. He states that he has often noted quite large defects which did not disturb peristaltic movements and in several cases found that they were caused by large folds of the mucous membrane. He discusses the procedure by which such defects may be differentiated from the defects produced by benign and malignant tumors and emphasizes the importance of recognizing them in order that an erroneous diagnosis of ulcer may be avoided.

Charles B. Clancy and Cunéo. The End Results of the Treatment of Gastric Ulcers by Gastropylorotomy. Kocher's Operation. *Ann Surg* 1937 105: 387

In seventeen of the twenty-seven cases discussed by the authors gastropylorotomy by Kocher's method was done for ulcer of the pylorus in nine for ulcer of the lesser curvature and in one for ulcer of the duodenum. Twenty-five of the patients could be considered cured. Two had had a other operation. In twenty-one cases the cure was complete all subjective and objective symptoms had ceased. The cure had been a gain in weight and the patient was not obliged to follow a diet. Four patients complained of slight gastric disturbances and a feeling of heaviness after meals. In two cases a complaint was made of a loss of weight, anorexia, vomiting and pain but no recurrence of the ulcer could be found.

In the group of cases in which the cure was complete X-ray examination showed the stomach to be small but tending to increase slightly in size with the lapse of time since the operation. Irregularities in the lesser curvature which were noted in some instances corresponded to the suture of the part of the stomach which formed the lesser curvature. No delay in evacuation although not entirely regular was quite similar to that of the normal stomach.

In the cases with slight gastric disturbances the shape of the stomach suggested a bagpipe and evacuation was slower sometimes taking two hours.

In the cases with more marked disturbances the stomach is bilocular with a deep fixed niche on the greater curvature and the omentum was folded back toward the top

ANNA L. PAGE

Pickhardt O C Concomitant Gastric and Duodenal Ulcers Two and One Half Years Post operative *Ann Surg* 1918 lxxxvii 143

Pickhardt reports the case of a woman fifty eight years of age who was suddenly seized with sharp cramp like pain in the right upper quadrant of the abdomen. The pains did not radiate and were not associated with vomiting or anorexia. The patient stated that thirty years previously she was in bed for two days with abdominal cramps and that two years ago she had had another attack of sharp pains localized in the right upper quadrant of the abdomen.

Physical examination revealed a smooth firm and fixed tender mass in the right upper quadrant in below the costal margin and in to the right of the umbilicus. The test meal showed a slight increase in acidity. The blood chemistry and blood count were normal and the Wassermann test was negative. The faces showed a trace of blood. The X ray revealed (1) a penetrating ulcer in the middle third of the lesser curvature of the stomach (2) an annular growth at the pylorus causing obstruction and (3) deformity of the pylorus suggesting scarring and ulceration. There was no evidence of vigorous peristalsis. Retention was marked.

Operation revealed on the anterior surface of the duodenum just distal to the pyloric vein a freshly perforated ulcer which had attached itself to the peritoneum opposite and to the right of the umbilicus causing the stomach to twist upon itself. At the juncture of the first and second parts of the duodenum posteriorly there was a large soft and slightly indurated mass which showed through an area of redness and scarring when the duodenum was turned. At the lesser curvature about midway between the pylorus and the cardia there was a soft mass measuring 1 by 1 cm at the posterior aspect of the stomach. On the anterior surface of the stomach midway between the lesser and greater curvatures there was a small healed area with very little induration which was attached by long old adhesions to the gastrosplenic ligaments.

A posterior gastro enterostomy was performed and before closure the omentum was placed over the buried ulcers.

The posterior course was normal until the eighth day when the patient began to vomit foul dark material in which a large ascaris lumbricoides worm was found. The vomiting continued for three days and then ceased under treatment by lavage.

An X ray examination made before the patient's discharge from the hospital showed the barium meal passing through both the pylorus and the stomach. The stomach emptied completely in four hours. One year later the findings were practically the same.

HARRY W. FINE M.D.

Junghagen S Lymphogranulomatosis of the Stomach (Lymphogranulomatose im Ventrikel) *Leta radiol* 1917 viii 317

The author describes two forms in which lymphogranulomatosis may occur in the stomach. In one it is part of a generalized condition and in the other the tumor form it is restricted to the stomach.

In the first form the roentgen picture resembles that of gastric ulcer unless multiple ulcers in an extensive indurated area and the failure of conservative treatment suggest malignancy.

In the second or tumor form which is usually found in the pyloric canal there is a quite circumscribed tumor which causes stenosis of the lumen. When the lymphogranulomatous granulation tissue does not involve the muscularis or infiltrates it only slightly there is a certain motility of the outline which with marked distinctness of the cuff shaped and quite extensive area of stenosis may be considered characteristic of this stage of the condition. In other respects the roentgen picture resembles most closely that of a malignant tumor.

The author suggests that linitis plastica may be identical with lymphogranulomatosis of the stomach.

Balfour D C The Principles of Gastric Surgery *Uresol* 1917 viii 68

Balfour D C The Management of Lesions of the Stomach and Duodenum Complicated by Hemorrhage *J Am Med Ass* 1927 lxxvii 166

Balfour D C The Results of Operation for Duodenal Ulcer in Physicians *Ann Surg* 1927 lxxxvi 691

In discussing the principles of gastric surgery Balfour says that the more the experience acquired in the surgical treatment of lesions of the stomach the greater the conviction that progress in the management of peptic ulcer will depend on a more intelligent selection of cases for operation and a better appreciation of the general principles of those operations which experience has shown to be worthy of application. The selection of the operation depends upon many factors the chief of which are the condition of the patient the stage of the disease the situation and character of the lesion and the complications associated with it.

The value of posterior gastro enterostomy is proved beyond any doubt since in properly selected cases this operation not only brings about a complete and permanent cure of symptoms but has an advantage over all other types of operation for lesions of the stomach and duodenum in that it is non destructive. Its greatest value is in the treatment of duodenal ulcer associated with obstruction. It is frequently necessary in cases of gastric ulcer in which it is used with local excision to protect against further ulceration and motor mal function. In cancer of the stomach posterior gastro enterostomy occasionally affords great relief when there is marked obstruction and the growth is small but irremovable because of penetration into extragastric tissue.

Anterior gastroenterostomy is an excellent substitute for posterior gastroenterostomy and has the same advantages. The disadvantage of anterior gastroenterostomy, namely that in some cases the proximal loop does not drain satisfactorily, can be obviated by carrying out an antroanastomosis.

Pyloroplasty is occasionally preferable for chronic duodenal ulcer or chronic gastric ulcer when the lesion is in the pyloric end of the stomach. The chief objection to pyloroplasty is the fact that in a considerable percentage of cases of duodenal ulcer there are multiple lesions. On the other hand, the procedure is valuable in the bleeding type of ulcer because it may include a fistulotomy and if a recurrence of ulcer at the take place subsequently a second operation usually gives gastroenterostomy can be carried out without great difficulty.

In cases with marked obstruction, high gastroenterostomy, contraindicated because of technical difficulties and the duodenal enlargement, is a satisfactory opening between the stomach and duodenum in front of the site of obstruction. Gastroenterostomy is a valuable procedure.

Partial duodenectomy is employed in the following cases of the bleeding type. While it has limited indication, it is an important procedure when it can be satisfactorily carried out.

Jejunostomy is occasionally of great value in cases of high lying benign and malignant lesions of the stomach and duodenum.

Total gastrectomy affords the only possible cure for gastric carcinoma. It is nevertheless a difficult type of operation for which gastric ulcer and indigestion also in recurring ulcers following operations. As a primary procedure for chronic duodenal ulcer it is unattractive and never becomes an operation of choice. The two basic types of gastric resection are the Billroth I and its modifications and the Billroth II and its modifications. For gastric carcinoma the latter type is the more satisfactory. The chief indication for partial gastrectomy in cases of gastric ulcer is the large ulcer with a deep crater and extensive induration about the ulcer. The possibility that such lesions may be malignant necessitates radical removal. Partial gastrectomy is indicated also when other operations have failed to cure a chronic peptic ulcer.

In discussing the management of lesions of the stomach and duodenum complicated by hemorrhage, Balfour states that in cases of peptic ulcer death rarely results from a single massive hemorrhage but may result indirectly because of continuous bleeding although with proper management of the case this is rare. For the reasons and because it is attended by a higher mortality than nonoperative measures, the surgical treatment of acute massive gastric hemorrhage regardless of its cause is a difficult problem. However, when hemorrhage from a peptic ulcer recurs before the patient has fully recovered from the total

hemorrhage operation preceded by transfusion should be performed as an emergency procedure for secondary hemorrhage.

Duodenal ulcer is the most common cause of hemorrhage from lesions of the stomach and duodenum. Of the 1072 cases of duodenal ulcer in which operation was performed in the Mayo Clinic during 1921 and 1922 there was a history of proved gastric hemorrhage in 18 per cent. The cause of the bleeding is not always clear; in some cases there may be a direct erosion of the gastroduodenal or superior pancreaticoduodenal artery but in others no gross defect in the mucosa of the duodenum can be found. In making a diagnosis in the cases it must first be established that the hemorrhage is primarily from the stomach or duodenum. Extrinsic causes should then be excluded although both extrinsic and intrinsic causes may be present in the same case. It may be safely asserted that duodenal hemorrhage complicated by hemorrhage is a surgical condition but the possibility of operation should be carefully weighed when hemorrhage has occurred in a patient who because of age or other factors is poor condition for operation. Transfusions judiciously used before operation and if necessary afterwards are all right but much to the rapidity and completeness of the recovery. There is a steady increasing tendency toward direct operation in cases of bleeding duodenal ulcer generally an erosion of the lesion but if the duodenum can be satisfactorily mobilized partial duodenectomy may be performed.

Of the cases of gastric ulcers in the series reviewed there was a complication of gross hemorrhage in 10 per cent. Fatal hemorrhage from a gastric ulcer may occur but is rarely a primary hemorrhage. The period between the appearance of the ulcer and the usually determine the presence or absence of gastric ulcer. If a negative report is given on a postoperative examination a search at operation for a lesion of the stomach will usually be fruitless. In cases of gastric ulcer complicated by hemorrhage the indication for operation are more positive than in cases of duodenal ulcer and the management is on a definite basis. The advisability of operation should be questioned only when the condition of the patient apparently prohibits such treatment. The results of various types of operation show that so far as the control of hemorrhage is concerned removal of the lesion offers definitely greater protection against further hemorrhage than an indirect operation such as enterostomy or jejunostomy.

Gross hemorrhage from primary gastric cancer is rare, occurring in 7.5 per cent of the cases in the series reviewed. Gross hemorrhage from cancer has no particular surgical significance except the important fact that it suggests a lesion other than cancer. Hemorrhage while somewhat rare in the early stage of carcinoma may be most distressing in the later stages and removal of the lesion at operation aside from the prospect of cure in favorable cases is a protection against the distressing complication.

Although benign tumors of the stomach are rare in about 10 per cent of the fifty eight cases in which operation was performed at the Mayo Clinic there had been a history of gross hemorrhage. Marked secondary anemia however was common in these cases. The surgical treatment of benign tumors can practically always be carried out satisfactorily. The majority of such neoplasms are in the pyloric end of the stomach and can be removed with facility through an incision in the anterior wall but in cases of certain large tumors particularly those in which malignant degeneration is suspected partial gastrectomy is preferable.

Balfour's report on the results of operation for duodenal ulcer in 100 physicians was compiled for several reasons the most important of which were that the cases were carefully selected representing the chronic case in which operation is clearly indicated and that as physicians have difficulty in carrying out a postoperative regimen which demands regularity in habits of living and eating the results of surgical treatment in this group should be more than a fair test of its value.

The average age of the patients was forty seven years and the average time since the onset of symptoms was thirteen years. The operations performed were posterior gastro enterostomy in 89 per cent, excision alone in 6 per cent, anterior gastro enterostomy in 3 per cent and gastroduodenostomy in per cent.

A summary of the results of these various types of operation shows that in 84 of the 100 cases the outcome can be classified as completely satisfactory. In 6 of the 100 cases relief has been incomplete but since all of these patients considered that the operation had been worth while the operation may be classified as successful in a total of 90 per cent. Five of the 100 patients have had a secondary operation and the remaining 5 report persistence of symptoms of such a character that the operative treatment must be classified as a failure although 3 of the 5 attribute their symptoms to disease of other organs particularly the gall bladder.

If results are estimated from the standpoint of what can be accomplished by a policy of conservative operation for duodenal ulcer followed by a secondary operation if symptoms recur the present condition of the patients demonstrates that the result of conservative measures is satisfactory in 93 per cent of the cases. The source of this information seems to establish the fact that a conservative attitude toward the treatment of duodenal ulcer is sound.

Borchers E. Successful Resection of the Upper Half of the Stomach (Erfolgreiche Resektion der oberen Magenhalfte). *München med Wochenschr* 1917 1454.

Borchers reports the case of a patient fifty one years old in whom he successfully resected the upper half of the stomach for carcinoma. For the anastomosis of the œsophagus to the stump of

stomach it must be possible after incision of the peritoneum to pull the œsophagus well down and to apply it to the pyloric portion of the stomach with ease. As long a portion of the œsophagus as possible must be covered by gastric mucosa according to Einman's method. This serosa should be sutured around the œsophagus and the stomach fixed to the diaphragm.

In Borchers's opinion resection of the upper portion of the stomach for carcinoma should be performed more frequently as in this region the lesion is relatively less malignant than in other parts of the stomach. The results will improve when the operation is developed as a typical strictly abdominal procedure.

STANNKE (Z)

Demel R. The Nutrition of the Intestine After Ligation of the Vessels in the Mesentery. Practical Recommendations Based on Experiments on Animals (Zur Frage der Ernährung des Darmes bei Gefäßunterbindung in Mesenterium). *Vorschläge für die Praxis auf Grund von Tierversuchen*. *J f kl u Chir* 1927 c lvii 701.

Demel reports a large number of experiments carried out on dogs to study the nutrition of the intestines after ligation of the vessels of the mesentery. Previous experiments had shown that it makes a difference whether the mesentery is severed close to the bowel or farther away. The experiments here reported were made to determine which vascular branches in the mesentery can be interrupted and at what points in their course this can be done without danger.

In various series of experiments ligatures were placed at different points on vessels of the first and second order, terminal marginal and radial branches. It was found that after ligation of vessels of the first order proximal to the point where branches of the second order are given off good nutrition of the bowel was maintained only if not more than two adjacent branches of the first order were ligated. If three or more branches were ligated gangrene of the bowel resulted. Ligation of branches of the second order was associated with less danger to the nutrition of the intestine as many as four adjacent branches of this order could be ligated. Ligation of a terminal branch caused no disturbance. Ligation of the radial branches was very dangerous and could be performed only at a distance of 4 cm.

These results show that when ligation of the vessels of the mesentery is necessary the ligation of vessels of the first order should be avoided if possible. Ligation of branches of the second order is better and permits the liberation of large segments of intestine from the mesentery without danger of gangrene. In the ligation of terminal radial and marginal branches great care is necessary.

In experiments on the ligation of vessels of the mesocolon no disturbances resulted when the colica media was ligated. The colon could bear ligation of a radial vessel for a distance of only 3

cm As the colon of the dog has a much richer blood supply than the colon of man these findings emphasize the importance of special care in the ligation of radial vessels of the human colon

DE C (Z)

Jayle F Endometriosis of the Intestine
Reception of the Rectum (L. I. M. D.)
L. I. M. D. R. J. S. D. G. E. T.
d. b. i. 9. 7. 1. 36

This is an extract of the literature on endometriosis of the intestine.

The condition occurs most frequently in the third and fourth decade of life and is frequently associated with sterility.

The neoplasm appears to be a like placenta containing blood clots and is located in the intestine. Mesenteric vessels are covered by normal meso-peritoneum. The tumor is thick and adherent to the peritoneum. It is a small, oval, grayish mass which may attain the size of a finger. Adhesions to the adjacent structures is the rule.

As the symptoms are not characteristic the condition is overlooked by the physician. The patient is so symptomatic producing adhesions or tumors include the lumen of the intestine.

The diagnosis is usually made by microscopic examination of the menstrual material. When the endometrial tissue forms an actual tumor the patient is usually cured. In the appendiceal endometriosis the condition is only on the appendix. The appendix is usually found for acute or chronic appendicitis.

Because of the serious diagnosis of malignancy the treatment of intestinal endometriosis is preoperative. When the tumor becomes better known the conservative treatment may be applied. In certain cases a Billroth II Gastrojejunostomy is performed.

Stephens R. A. Aute Intussusception of the Nipple
Relative Reduction of the Intussusception of the Nipple
A. J. D. C. I. D. 9. 8. 6

Stephens reports the case of a man who had a reduction of the nipple intussusception by the application of a barium meal under fluoroscopic control. This method was previously described by Peters.

Anæsthesia is necessary. Only a small amount of barium is injected at a time and the manipulations are gently applied at that point at which the enemesis takes the intussusception. A gradual trickle of barium into the lumen is sufficient to complete reduction. If there is any doubt concerning the completeness of the reduction the abdomen should be explored at once.

Stephens concludes that manipulation reduction should be attempted in every case. When the attempt fails the hamstrings become indurated and the procedure is performed by the open method and proper surgical treatment can be instituted immediately.
JOHN H. GARLOCK, M.D.

Olech I. Y. Duodenal Regurgitation as a Factor in the Neutralization of Gastric Acidity
S. J. 9. 8. 5

In his studies of duodenal regurgitation Olech chose histamine as a standard stimulant for the secretion of gastric juice because it is stable and as it is administered by hypodermic injection dilution of the gastric secretion is avoided. He calls attention to the fact that the results of the usual test meal are unsatisfactory on account of the variable chemical composition of the substances ingested and change in the reaction of the gastric contents due to the admixture of saliva and the influence of the psychic phase on gastric secretion.

The curve obtained after the intramuscular injection of 1 mgm. of histamine into the normal dog is shown. The stomach was emptied every ten minutes and 10 c.c.m. of the gastric contents were titrated with tenth normal sodium hydroxide. The pepsin and phenolphthalein being used as indicators. The effect of the drug as noted in the first aspirate and the highest degree of acidity as reached from thirty to forty minutes after the injection. This was equivalent to 0.45 per cent of hydrochloric acid slightly less than the degree of acidity of pure gastric juice as secreted. Variations were not marked in normal dogs in no case being more than ten during the first sixty minutes of the examination. The amount of fluid withdrawn from the stomach represented pure gastric juice minus an amount lost through the pylorus plus an amount added by the regurgitation of the duodenal fluid.

When a moderate amount (0.05 c.c.m.) of 0.5 per cent hydrochloric acid (the concentration at which gastric hydrochloric acid is secreted) is introduced into the stomach the acidity decreases in degree as the fluid leaves the stomach. This decrease is caused by neutralization of the acid by regurgitation of the alkaline duodenal fluid which is composed of pancreatic juice and succus entericus. The pancreatic juice is the most important of these three secretions because it is produced in large amounts when the degree of acidity of the stomach is high and also because its alkalinity is much greater than that of the two other fluids. This regurgitation of pancreatic juice was first noted by Boldyreff and called by him the self-regulating mechanism of the stomach is a constant occurrence in the evening as well as the active stomach. Pancreatic juice is secreted in direct response to gastric acidity and one of its functions is to neutralize the latter before the acid reaches the much more sensitive intestinal mucosa.

In experiments carried out on dogs to determine the influence of nervous control on the secretion of the stomach branches of the vagus nerve were sectioned intrathoracically into the abdominal cavity and by circumcising on the prepyloric part of the stomach. The results obtained were similar regardless of the site of the section. In every case the degree of gastric acidity was diminished apparently because of the more patulous condition of the pylorus.

The author comments upon various procedures performed upon the stomach for ulcer. As a rapid decrease in acidity is the ideal result to be obtained he believes that resection and pyloroplasty offer the greatest promise of cure because they favor regurgitation of the duodenal contents with resultant neutralization of the acidity. He does not favor gastroenterostomy. MORRIS A SLOCUM M D

Wheeler Sir W I DeG. A Case of Actinomycotic Ulceration of the Duodenum and Jejunum
Brit J S g 19 3 xv 430

So far as can be ascertained from the literature ulceration of the duodenum from actinomycotic infection is very rare.

The case reported by the author was that of a man forty years of age who had been suffering for four months from vague abdominal pains, loss of weight and appetite and gastric stasis. On the patient's admission to the hospital his temperature ranged from 99 to 101 degrees F and he showed definite cachexia. After his admission he had a severe attack of hæmatemesis. Examination revealed tenderness and some rigidity above the umbilicus. Hydrochloric acid was absent from the stomach contents.

X-ray examination showed the stomach to be dilated and hypotonic. There was diffuse narrowing of the pyloric segment with gross irregularity of outline in both curvatures. A diagnosis of pyloric obstruction due to carcinoma was made.

At operation in which the abdomen was opened in the midline above the umbilicus a loop of jejunum about 1 ft from the duodenojejunal flexure was found to be the site of a tumor and adherent to the omentum and the neighboring coils of intestines on its surface. The tumor was red and acutely inflamed. In two or three places perforations closed by loose adhesions passed through the inflamed area into the lumen of the intestine. The loop of jejunum was resected and an end to end anastomosis done.

On the eighth day after the operation the patient experienced a sudden pain probably due to perforation and died a few hours later.

At autopsy the third portion of the duodenum was found to be ulcerated in much the same manner as the resected loop. The cause of death was leakage at the line of anastomosis.

The portion of intestine removed at operation showed two perforations. Except for the inflammation in the immediate vicinity of the perforations there was relatively little peritonitis. The mucous surface presented two transverse ulcers which were partly confluent and extended circularly around almost the entire circumference of the intestine. The edges were ragged and partly undermined and there was a red line of intense inflammation about their margins. The floors of the ulcers were shaggy and covered by a dark green adherent slough.

Microscopic sections showed the surface of the ulcer to be covered by necrotic material containing a moderate number of pus cells and many bacteria.

Beneath this the inflammation was of a more or less subacute or chronic type. Plasma cells were very numerous and the general background of the structure was that of granulation tissue. This inflammatory process extended down to the muscular layers. The bacteria in the slough were cocci and bacilli. Some of the latter were long and filamentous. In the floor of the ulcer there were several clumps of microorganisms composed of branching partly beaded filaments arranged in a radiating fashion and of a type closely resembling the streptothrix.

Autopsy showed the second and third parts of the duodenum also to be perforated and revealed a large ulcer beginning at the bile papilla and extending lengthwise as far as the duodenojejunal flexure and circularly around the entire circumference of the bowel. The ulcer resembled the lesion previously found but was more extensive and had a more shaggy greenish base. Its floor was composed of a ragged mass of necrotic tissue.

The patient had suffered from a rare severe ulcerative condition of the duodenum and jejunum. The ulceration was of an almost diphtheritic type with comparatively little suppuration, the tissue reaction being mainly of the plasma cell type with lymphoid cell infiltration. Many microorganisms were found in the superficial sloughs but the preponderating one was of the streptothrix type. Organisms of the ray fungus type were found in the floor of the jejunal ulcer but only in the slough of the duodenal ulcer. No streptothrix was found in the lymphatic glands. According to Cope secondary deposits of this organism in lymphatic nodes are unusual.

HOWARD A MCKNIGHT M D

Schlanger P and Finochietto R. Ulcer of the Duodenum, Snail Stomach, and Partial Insufficiency of the Pylorus (*Úlcera del duodeno, estóma o en caracol e insuficiencia parcial del píloro*) *Semana med 1927 xxiv 193*

In the case of a patient thirty two years of age who was admitted to the hospital with the symptoms of gastric ulcer roentgen examination showed the picture of the condition variously called snail stomach, tobacco pouch stomach, and U shaped stomach. There was retraction of the lesser curvature with displacement of the pylorus upward and to the left (toward the cardia) and displacement of the prepyloric portion of the greater curvature upward and to the right. There was also insufficiency of the pylorus. This picture is caused by spastic retraction of the lesser curvature due to ulcer of the lesser curvature or the duodenum.

AUDREY G MORGAN M D

Thompson W and Stewart M J. A Remarkable Example of the Tendency Toward Recurrent Peptic Ulceration Following Gastro Enterotomy for Duodenal Ulcer *Brit J S g 1928 xv 517*

The author reports the case of a patient who was subjected during a period of sixteen years to five separate operations upon his stomach, four gastro

ulcerative colitis. In the event case an ileostomy was performed during an acute exacerbation after the patient's dismissal.

Caraven and Basset Strictly Mechanical Obstruction of the Intestine without Abscess or Peritonitis in the Course of an Initial Attack of Appendicitis (Occlusion intestinale strictement mécanique sans abcès ni péritonite au cours d'une première crise d'appendicite) *Bull. et mém. Soc. nat. de chir.* 927 111 1104

Basset reports a case of complete intestinal obstruction which was treated by Caraven. The patient was a girl eighteen years of age who gave a history of a rather severe attack of pain in the lower abdomen twelve days previously. Before that attack she had never been ill. When she was examined by Caraven the abdomen was relatively flat but dilated loops of bowel could be seen through the abdominal wall. No peristalsis was noted. Palpation revealed slight tenderness just below and to the right of the umbilicus. Just above the pubes there was slight oedema. No tenderness was found over McBurney's point. Rectal examination revealed in the cul de sac a mass which had the elasticity of a cyst. The pulse was 90 and the temperature normal. The pre-operative diagnosis was intestinal obstruction due probably to paralysis caused by a pelvic abscess of appendicular origin.

At the time of operation which was unavoidably delayed the temperature was subnormal. The pelvis was found filled by the distended ileum. There was no peritonitis or abscess. The inflamed but not perforated appendix was pointed upward toward the umbilicus and was adherent at its tip to the small bowel at about the juncture of the jejunum and ileum. During the liberation of the adhesions the jejunum was perforated. The patient died a few hours after the operation. **MICHAEL L. MASOV M.D.**

Brennemann J. Abdominal Pain of Throat Infections in Children and Appendicitis. *J. Am. M. Ass.* 1927 LVIII 2 83

In the course of throat infections in childhood there frequently occurs a peculiar abdominal pain that is of great importance in the differential diagnosis of abdominal conditions in which pain is the cardinal symptom. Among the most important complication which may arise in the course of infections in the nose and throat is appendicitis. The nose and throat conditions to which the author refers comprise the whole group of non-specific sporadic endemic epidemic pandemic febrile infections that have their primary locus in the nose and throat and are variously called tonsillitis pharyngitis nasopharyngitis or throat cold bronchitis upper respiratory tract infection angina glandular fever grip and influenza.

There are two types of abdominal pain. The first type is more frequent than the second and occurs early. It is usually intermittent or colicky and accompanied by little or no tenderness either at its

site or elsewhere. It is practically always referred to the region of the umbilicus and nearly always if the patient is questioned closely to the umbilicus itself. The second type of pain is less sharply defined usually less severe and more apt to be intermittent than constant. It may be localized anywhere in the abdomen but occurs most often at the umbilicus or in the lower right quadrant. There is practically always an accompanying tenderness especially if the appendix is involved. In some cases a mesenteric lymphadenitis may be present.

The author has for years noted that in children appendicitis often occurs as a complication or sequel of throat infection. On the basis of this observation he has formulated the following concept: Throat infection abdominal pain appendicitis. He cites the opinion of Evans of the University Clinic Madison Wisconsin that appendicitis is apt to occur just after rather than during an infection of the upper respiratory tract.

In conclusion Brennemann states that enteritis is a frequent complication of throat infections and that non-appendicial pain in the abdomen is a much more common accompaniment of throat infection in children than pain due to inflammation of the appendix. **CHARLES F. DUBOIS M.D.**

LIVER GALL BLADDER PANCREAS AND SPLEEN

McIndoe A. H. and Counsellor V. S. The Bilaterality of the Liver. *Id.* 5 8 927 x 589

The right and left branches of the portal vein are regularly and definitely divided along a line from the fossa for the gall bladder to the entrance of the hepatic veins into the inferior vena cava. Except for the intercellular sinusoids which are probably insufficient to maintain a collateral circulation there is no gross anastomosis across the line of separation.

The right and left branches of the hepatic artery are also separated in the same manner and at the same situation. There is an arteriolar anastomosis between the right and left sides chiefly between the capsular and vaginal branches but it is not sufficient to prevent infarction of the corresponding lobe following occlusion of either branch.

The line of separation of the right and left hepatic ducts is identical with that of the artery and vein but the division is absolute. The facts of embryology anatomy and pathology are in accord with the assumption that the two areas of liver determined by this division which is common to the three vessels represent the true embryological right and left hepatic lobes and that the falciform ligament is merely an arbitrary landmark.

Snell A. M. and Rowntree L. C. The Functions of the Liver and Tests of Their Efficacy. *Obstet. M. J.* 92 xx 99

During the last decade considerable progress has been made in the study of the liver and its

The authors discuss the significance of the presence and nature of pain in the diagnosis of stones pressure on the duct distention of the liver and malignant disease and the significance of recurrent pain after operation. Severe colic after an operation for stones does not always indicate recurrence of stone. In the authors' series of cases of benign stricture without stones there was a history of severe colic in 90 per cent.

The significance of high concentration of bilirubin in the blood is discussed particularly in relation to carcinoma of the pancreas. The authors did not encounter this disease in patients under the age of thirty-nine years. While carcinoma of the pancreas occludes the duct absence of bile from the duodenal contents is not an infallible diagnostic point. The duodenum may not have been reached or intrahepatic disease may have interrupted the flow. The authors recommend repeated duodenal drainage to obviate these sources of error.

The advantages of determining the bilirubin in the serum are presented. The changes in level occur more quickly than the visible manifestations of jaundice and when the level is high changes cannot be measured by clinical observation. The authors prefer the van den Bergh method to the Meulengracht method for various reasons including the advantage of the information conveyed by the type of reaction.

Cholecystitis seldom calls for a determination of the concentration of serum pigment.

Of the less important signs the authors find few of much significance in determining the origin of the jaundice. Variations in the color of the skin and the presence of pruritus have no constant significance. Courvoisier's law is not as well supported clinically as it is at autopsy and interpretation of the findings of palpation in the region of the gall bladder is hazardous. Bradycardia in jaundice the authors characterize as almost a myth.

Tests of function have not been of value in diagnosis because structural injury does not go hand in hand with impairment of function and even if dysfunction is present its degree cannot be made the basis for diagnostic conclusions. The examination of the urine for urobilin or urobilinogen has not found as much favor with the authors as with others since the cardinal question is whether or not bile is reaching the intestine. This can be determined more accurately and directly by siphonage of the duodenum. A case is cited in which the urobilinogen test was misleading.

Tests of pancreatic function are uncertain because enzyme activity depends on other constituents of the duodenal juices. Moreover the common bile duct may be occluded by a pancreatic tumor when the pancreatic duct is patent.

The measures to be taken to reduce the risk of hemorrhage are reviewed. The method of administering calcium chloride is described. Transfusion is necessary if delay in coagulation persists. It may be necessary to repeat these measures.

Heyd C G Acute Hepatic Degeneration Cholecystogastrostomy *Am Surg* 1928 LXXXIV 146

Heyd reports the case of a man twenty-six years of age who entered the hospital complaining of jaundice nausea vomiting weakness and mental depression. During the previous six weeks he had lost 10 lb. His illness began about two months previously with fever and weakness. The jaundice first appeared about two weeks after the onset of the fever increased in intensity for about three weeks then faded and after an interval of a few days recurred with fever and vomiting. There was no pain but the condition was associated with considerable eructation of gas. The patient stated that his stools were gray. His previous surgical history included a mastoid operation a septum operation tonsillectomy and adenoidectomy.

The physical examination was negative except for tenderness in the right upper quadrant of the abdomen and a palpable liver and spleen. A tentative diagnosis of obstructive jaundice—probably of toxic origin—was made. The leucocyte count was 11,800 and the platelet count 24,000. The Wassermann test was negative. The icterus index was 100. The van den Bergh direct test was 1+ the van den Bergh indirect test 3+ and the Fouchet test 3+.

X-ray examination of the gall bladder region revealed no evidence of calculi. The right lobe of the liver was markedly enlarged but its free border was quite smooth. X-ray examination of the kidneys was negative. X-ray examination of the gastrointestinal tract was also negative except for colonic spasm and stasis in an irregular segmented appendix. The stools were uniformly clay colored.

At operation the liver was found to be twice the size that is normal for the patient's age weight and stature. There was no evidence of fibrosis of Glisson's capsule. The abdomen contained about 300 cc of pale amber ascitic fluid. The gall bladder was thickened but without stones. The common duct was narrow but not thickened. The lymph glands at the juncture of the cystic and common ducts were enlarged. The pancreas was softer than normal. The gastroduodenal segment was negative. The lower abdomen was not explored. The operation consisted in cholecystogastrostomy with application of the gall bladder to the lesser curvature of the stomach about 3 cm from the pyloric ring. The suture line was reinforced by wrapping a portion of the greater omentum about it and a small cigarette drain was placed in Morrison's space.

Aside from nausea which lasted for six days the postoperative course was uneventful. The jaundice quickly decreased in intensity the bile tests approached normal and the stools became of a normal color.

The author believes that the underlying factor in this case was an infectious or toxic condition with degeneration of the hepatic parenchyma. He concludes that as a result of the destruction of the

liver cells the bile canaliculi became blocked with broken down cellular detritus and bile thrombi. The cytology of the liver cells continued with the formation of ocellular leukocytes. Two factors were at play: (1) primary destruction due to a hæmatogenous process; (2) the mechanical factor with obstruction of the small bile canaliculi. The final result so far as the liver is concerned is an intense oedema of the entire organ. The condition can be described as a hydrophobia.

The purpose for which the choledochostomy was done to drain the bile of the oedema fluid and thereby relieve the passive congestion.

HARRISON M.D.

Judd E. S. and Counsell A. S. The Effect of Obstruction of the Common Duodenum of the Rat

Stones in the common bile duct and benign traumatic stricture of the bile duct are long duration and so at the onset of the disease the patient is usually asymptomatic and the disease is usually discovered by the patient's history. The gall bladder is normal in size and shape but the common duct is dilated with marked hydrohepatitis and pancreatitis. The gall bladder is usually markedly dilated.

Correlation of the above findings with the histological picture of the changes in the form of the histological picture of the condition is sental.

Boyden E. A. Concerning the Potential Denial of Functio Laesa Long Attributed to the Gall Bladder

The radical conception that have received considerable emphasis in recent years are that the gall bladder does not play a significant rôle in digestion and that it is a passive organ. The first of these views is no longer tenable and the second is fast being dispensed.

One of the arguments upon which the denial of active function of the gall bladder is based is that contraction of the organ had been observed during operation. This is due to the effect of the anæsthesia upon the abdominal organs and the effect of the contraction by the mechanical manipulation of the organ. The operation of the organ is not observed during operation. The effect of the anæsthesia upon the abdominal organs and the effect of the contraction by the mechanical manipulation of the organ is not observed during operation.

The function of the gall bladder as a storage organ was denied on the basis of the effect of the organ. It was argued that the gall bladder is too small to hold all of the bile that is secreted in twenty-four hours. Recent investigations have shown however that no such demand is made upon the organ as much

of the bile secreted by the liver passes continuously for a time following a meal and at longer intervals during fasting.

In the last few years it has been shown that the gall bladder has great concentrating power and that frequently it discharges part of its contents during fasting and all or much of its contents after a meal.

Another argument advanced as indicating the relative unimportance of the gall bladder is that the organ may apparently be removed without impunity. Frequently however cholecystectomy results in well recognized digestive disturbances and the first effect of the operation is dilatation of the intestine.

By the Graham method of cholecystography it is concluded that egg yolk and cream produce complete emptying of the human gall bladder. A study of the results in twenty-four healthy young men and women showed that the discharge of bile from the gall bladder is intermittent and that the first contraction phase is the most important. The normal gall bladder is somewhat smaller than the normal empty intestine. After the ingestion of food the entire small intestine is in a latent period of contraction usually less than two minutes. Since the presence of the bile in the duodenum is known to initiate the flow of the pancreatic juice its discharge from the gall bladder at the beginning of a meal has a double significance.

To refute the theory that the decrease in the amount of bile in the gall bladder after a meal is due to the concentration of the bile in the viscous material it is pointed out to the speed with which the lumen of the human gall bladder may be reduced.

It has been repeatedly shown by several investigators that expulsion of bile from the gall bladder can be produced experimentally when all force is exerted on the muscle tunic of the organ. It has been eliminated. The muscle tunic of the gall bladder exhibits all of the common physiological characteristics of smooth muscle including the power of spontaneous rhythmic contraction. Expulsion of the contents of the gall bladder has been not only accomplished by drug having an effect on smooth muscle but also by direct stimulation of the muscle. Whitehead found that when all of the gall bladder is damaged by squashing it with the clamp the viscous fluid to empty is poured out of the mouth of the organ.

Byrd concludes that in the cat the gallbladder is not a muscle tunic of the gall bladder. He states that if the correct immediate problem of the future will be to determine the mechanism by which the gall bladder musculature is activated and how the flow of bile from the common duct is regulated.

In a supplementary note the author refers to the work of Ivy demonstrating that evacuation of the gall bladder by the dog may be caused by intestinal anastomosis of a highly perfused secret. This observation seems to prove that after the first gestation

of food contraction of the gall bladder is sustained by a humoral mechanism originating in the mucosa of the small intestine

The article contains several cholecystograms photomicrographs and graphs and is supplemented by an extensive bibliography

J FRANK DOUGHTY M D

Dick B M and Wallace V G H Cholecystography Toxic Effects of the Dyes A Clinical and Experimental Study *Brit J Surg* 1928 xv 360

The object of this communication is to record certain toxic effects of sodium tetra iodophenolphthalein which have not been observed previously and to review experimental investigations of the drug To show the toxic effects three clinical cases are presented

The first case was one of acute hemorrhagic pancreatitis which followed immediately after an intra venous injection of the drug The patient died at operation The dose given in this case 5 gm was in excess of that recommended by Graham

In the second case the administration of the drug was followed by jaundice

In third case that of a young jaundiced patient death occurred within thirty hours after the oral administration of the sodium salt

In the authors experimental study which was carried out upon cats and rabbits the attempt was made to reproduce as far as possible the conditions obtaining in the human subject Particular attention was paid to (1) the action of the drug on the pancreas (2) the action of the drug upon the liver and the kidney in experimental common duct obstruction and (3) the mode and rate of excretion of the drug in conditions of biliary obstruction

In the absence of other contributory factors normal bile containing sodium tetra iodophenolphthalein introduced experimentally into the pancreatic ducts is sufficient to cause acute pancreatitis It therefore seems justifiable to assume that in cases of cholelithiasis with stones in the common bile duct in which conditions are favorable for the retrojection of bile into the pancreas the danger of acute pancreatitis will be much greater if the regurgitated bile contains the phenolphthalein salt

In obstructive jaundice the normal route of elimination of the drug is unavailable and small quantities are excreted in the pancreatic juice In animals with experimental biliary obstruction especially rabbits the pancreas showed pathological changes ranging from simple vascular congestion to hemorrhagic pancreatitis This observation suggests that there is risk of damage to the pancreas in the administration of the agent to patients who are jaundiced and who have chronic obstructive lesions of the biliary passages

The toxic action of the drug on the liver is greater when biliary obstruction is present The kidney although it eliminates the drug is not affected The rate of excretion is rather slow

HERMAN H HUBER M D

Kirklin B R Caylor H D and Bollman J L The Concentration of Cholecystographic Media and Bilirubin by the Gall Bladder *Radiology* 19 7 ix 463

Since the shadow obtained by cholecystography is the result of concentration of the opaque medium by the gall bladder a study was undertaken to determine whether any relation exists between the intensity of the shadow and the concentration of bilirubin

The material consisted of 113 cases representing a wide variety of gall bladder diseases In each instance the patient was examined by cholecystography prior to operation the gall bladder then being removed and examined microscopically and the bilirubin content determined

Contrary to expectations no constant relation seemed to exist between the intensity of the shadow of the gall bladder and the concentration of bilirubin In the group of cases with a bilirubin content of 10 mgm or less for each 100 c cm of bile no shadow of the gall bladder was seen in the roentgenograms In the intermediate group with a bilirubin concentration of 11 to 50 mgm the cholecystographic responses varied heterogeneously from a dense shadow to none at all Most surprising was the fact that in the group of cases with a pigment content of more than 50 mgm the gall bladder seldom produced a shadow

Wilkie A L The Bacteriology of Cholecystitis A Clinical and Experimental Study *Brit J S g* 19 8 xv 430

In the vast majority of cases of chronic cholecystitis in the human subject the bile is sterile on culture

In the authors studies cultures of the whole thickness of the gall bladder wall most frequently showed no growth while cultures made from the submucous and outer coats the mucosa being left intact gave a growth of streptococci in 4 per cent of cases Bile inhibited the growth of the streptococcus

In cholecystitis the cystic gland yielded a growth of streptococcus in 86 per cent of cases *Bacillus coli* was recovered from the bile in only 6 per cent In the one case in which this organism was recovered from the cystic gland contamination by bile could not be excluded

The streptococcus of cholecystitis is a short chained type producing smooth non hemolytic colonies on agar and growing readily on glucose broth Injections of saline suspension of this organism into the lumen of the gall bladder of the rabbit produced no change

Intramural injections of streptococci into the gall bladder of the rabbit produced a progressive chronic cholecystitis from which the organism was readily recoverable

When the cystic duct was ligated intramural injections produced a chronic empyema with marked intramural changes

GYNECOLOGY

UTERUS

Mikels F M Electrodathermy—Its Use in the Treatment of Benign and Malignant Lesions of the Uterine Cervix *California & West Med* 1928 LVIII 6

As the uterine cervix is the portal for the perpetuation and preservation of the species its treatment should be based upon the principles of conservatism. In the use of electrodathermy this premise is recognized.

The D Arsonval current a form of high frequency is most satisfactory. By means of it desiccation coagulation or carbonization of tissue may be obtained depending upon the extent of the lesion. The author reports gratifying results from diathermy in the treatment of endocervicitis mucous polyps and cervical erosions. The method may be used also for the eradication of deep and persistent gonococcal infection of the glands. In cervical malignancy the lesions should be thoroughly electrocoagulated and this treatment followed immediately by adequate radium irradiation and subsequently by deep X ray therapy. Focal infections of the cervix which may lead to complications after delivery can be destroyed by diathermy during pregnancy without interfering in any way with the process of gestation.

ALICE I MAXWELL M D

Palmer A C The Age Incidence of Carcinoma Corporis Uteri *Proc Roy Soc Med Lond* 1928 VI 367

In the study here reported only primary cancer of the body of the uterus was considered. Chorion carcinoma and carcinoma which involved the cervix also were not included.

Of all cases of cancer of the uterus admitted to the hospital Palmer finds the corpus to be the site of the lesion in 26.65 per cent.

Of 250 cases of carcinoma of the body of the uterus the condition developed between the ages of fifty and sixty years in 52.4 per cent between the ages of sixty and seventy in 22.4 per cent between the ages of forty and fifty in 19.6 per cent between the ages of thirty and forty in 2 per cent and before the age of twenty in only 0.4 per cent. There were no patients between the ages of twenty and thirty years.

NATHAN N CROHN M D

Fluhmann C F Epidermization of the Cervix Uteri and Its Relation to Malignancy *Am J Obst & Gynec* 1928 XI 1

The author uses the term epidermization to designate the process by which the normal cylindrical epithelium of the cervix is replaced by

stratified squamous epithelium. This alteration has been attributed to (1) an ingrowth of basal cells from the adjacent normal squamous epithelium (2) the proliferation of basal cell rests beneath the cylindrical epithelium to replace the eroded or weakened columnar cells (3) the metaplasia of infra epithelial cells (4) the direct implantation of squamous epithelium and (5) undifferentiated embryonic cells which mature under pathological stimulation.

It occurred in 59 instances of chronic cervicitis found in a series of 1105 specimens of the cervix and in 29 of 100 cervical mucous polyps. It was noted also in cervixes of the newborn and in endometrium.

At times the process may lead to the formation of atypical epithelial growths which may be termed epidermization. Careful study of serial sections and repeated biopsies may be necessary to differentiate these findings from early carcinoma. In rare instances malignancy can be excluded but certain features are present which may be considered precancerous. It is not certain that these represent transitions from a benign to a malignant growth and there is reason to believe that most of them would probably prove harmless.

ALICE F MAXWELL M D

Dustin A P A New Contribution to the Radiobiological Study of Epitheliomata of the Uterine Cervix Subjected to Radium Therapy at a Distance (Telecurietherapy) the Curves of Pyknoes and of Normal and Atypical Mitoses (Nouvelle contribution à l'étude radiobiologique des épithéliomas du col utérin soumis à la télécurietherapie les courbes de pycnoses de mitoses normales et de mitoses atypiques) *Ca et* 1927 IV 387

Dustin outlines briefly the problems of radiobiology calling attention to the fact that the whole question of the effect of irradiation on normal as well as tumor tissue is still in a somewhat chaotic state. The sensibility of cells in the process of karyokinesis is well known but the practical application of this knowledge is difficult. With regard to latency, cumulation and radio immunization a great deal still remains to be learned.

In co operation with several surgeons the author studied numerous sections taken from epitheliomata of the cervix undergoing irradiation. A series of six cases were thus studied. In one case the changes occurring during a recurrence and subsequent irradiation were also observed.

The treatment consisted in telecurietherapy (irradiation with radium at a distance). Four grams of radium element were placed at a distance of 1 cm from the skin and filtered through 1 mm of platinum

5 mm of aluminum and 4 cm of wood. From six to ten exposures were given daily for from nine to fifteen days. At each exposure 5 mc and on each day of the treatment from 150 to 250 mc were used.

A biopsy specimen was taken at the beginning of the treatment and at frequent intervals during the irradiation so that in each case from six to eleven specimens were examined. The tissue removed as fixed at once in a chromic acid fixative and stained with Heidenhain's iron-haematoxylin and Masson's trichrome. Determinations were then made of the number of mitoses in the field, the number of pyknotic nuclei, the variations in the amount of connective tissue and the type of cellular infiltration. The articles contain numerous graphic charts and photomicrographs showing the various phases of the reaction. Duration has summed up his observations as follows:

In the most tumors react similarly to irradiation but numerous variations are noted. Some of the neoplasms requiring a much greater dose than others to reach the am stage. The reaction has five phases. In the first phase the epithelium is more or less rapidly destroyed in the number of mitoses with an increase in the number of pyknotic nuclei. In three cases the drop occurred on the fifth session, in a dosage of from 575 to 500 mc in one case with ninety-four hours after a dosage of 250 mc in a third case with ninety-eight hours after a dosage of 55 mc and in another case after three days following a dosage of 750 mc.

In the second phase there is a more or less rapid and sustained increase in the number of atypical mitoses. This is usually begun at a variable time between the third and fifth days of treatment and reaches its maximum after from eight to ten days.

In the third phase the stage of histolysis normal mitoses are entirely absent and the case is a rapid decline of the atypical mitoses. In one case the findings renoted on the second day but in the other two not apparent until the third day. During this stage many cellular mitoses appear.

In the case which a second irradiation as necessitated by recurrence, the irradiation before the second irradiation revealed that although despite the destruction of the tissue showed the effects of irradiation on the cell on the surface quite undifferentiated and undegenerated mitoses. Mitoses were few, but abundant atypical mitoses were frequent. A second exposure to diminish the tumor reacted similarly at the time of the first exposure though not so markedly. Although the atypical mitoses were reduced in number there were several recurrences during the treatment.

Dustin reviewed briefly the work of Lacasagne and Monod Schwartz, Albrin and Polster, Clunet and Domenech and describes that the experimental demonstration of the reactions of the endometrium to mitotic cell irradiation and the appearance of

degenerative atypical mitosis. He believes that these are the first tissue studies made during telecurietherapy. He discusses the efficacy of this method of treatment and describes an accurate method of measuring the results.

The disappearance of normal mitosis and the pyknotic degeneration of nuclei in the process of division appear to be constant with certain limits regardless of the amount of irradiation. The duration of the changes and the rapidity of return to the previous condition depend upon the nature of the tumor and the intensity of the treatment. The appearance of degenerative atypical mitoses cannot be prevented even by large doses and continued treatment. It seems to be due to intoxication of the cells in the process of division.

The chromatin affected by irradiation is unable to give rise to normal mitoses but this effect is not maintained. After a while the cell re-acquires a normal or even more than normal power of division unless they are killed by the treatment or have been so long incapacitated that the normal defenses possess of the body are able to destroy them. In judging the potential activity of a neoplasm during irradiation it is necessary to take into account not only the normal but also the atypical mitoses. The atypical mitoses are already degenerative and are not an index of the karyokinetic rhythm of the tumor.

The study of the case of recurrence showed that insufficient irradiation is dangerous as it is followed by an intense karyokinetic reaction on the part of the tumor cell. It demonstrated also that a recurrence is a basis to treatment by radium irradiation in the same way as the original tumor.

MICHAEL L. MASO, M.D.

Polak, J. O. The Present Status of the Therapy of Cancer of the Uterus. *J. Obst. & Gynec.* 9: 8, 6.

In cancer of the cervix surgical extirpation is indicated only when the growth is wholly within the confines of the cervix and the cervix is freely movable. All borderline and advanced cases fall within the range of radium. Radium destroys the cancer cell as completely as any surgical procedure. Nothkott suggests cancer so quickly as man palpation especially such occurs when an incomplete extirpation done through malignant structures.

In cancer of the body of the uterus pelvic operation followed by total hysterectomy with postoperative radiation is the accepted procedure. Polak favors preoperative radiation from four to six weeks prior to the operation.

Diagnosis of curettage is dangerous because of the penetration of the lymphatics. It should therefore be preceded by a hypodermic injection of pituitary extract to contract the uterus and the contraction should be maintained by the use of additional pituitin. Radium should then be introduced immediately into the body of the uterus to kill the lymphatics.

NATHAN CROWN, M.D.

Petit R. Vaginal Hysterectomy Technique and Indications 123 Consecutive Cases without Complications (*L'hystérectomie vaginale technique et indications 123 cas consécutifs sans acci- dents*) *Bull et mém Soc d chirurgiens de Par* 1927 xiv 516 537

Vaginal hysterectomy has of late years been sup- planted by abdominal hysterectomy but when it is performed by a standard technique it is an excellent procedure and possesses certain advantages over the abdominal operation.

In the author's technique for vaginal hysterectomy the vagina is disinfected by douches of $\frac{1}{2}$ per cent tochlorine or 1:1000 oxycyanide of mercury for several days before the operation and a purgative is given three days before the operation.

On the operating table the patient is placed in the lithotomy position the field painted with iodine the cervix pulled down and the cervical canal sterilized with the thermocautery.

A curved incision passing through the mucosa is then made on the posterior and anterior walls of the cervix. The two incisions come together at the sides of the cervix and are prolonged upward into the fornices. The scissors are then introduced into the posterior incision close to the uterus and the tissues pushed back until the plane of cleavage between the peritoneum and uterus is found. The space of Douglas is opened with the scissors or the finger a long retractor is placed in the cul de sac and a gauze pack is inserted so as to hold the viscera back. In a similar manner the uterus is separated anteriorly and a retractor is introduced to hold the bladder forward.

The cervix is then pulled laterally and the tissues in the base of the broad ligament are dissected with a compress covered finger. The uterine artery which is thereby exposed is ligated. After a similar procedure on the right side the uterus is brought down into the field.

If the uterus is small the fundus may be brought out through the vagina anteriorly but if the uterus is large it is carefully divided along the median line the edges of the incision being progressively grasped with forceps and gentle traction being maintained until the organ is delivered. If a large fibroid is encountered it is removed.

The adnexa on the most accessible side are then drawn downward and a ligature is carried around the ovarian ligament by means of a ligature carrying forceps introduced through the broad ligament below the tube. The round ligament is ligated and cut. The broad ligament is then separated with the gauze covered finger from above downward ligatures being applied wherever necessary.

After both sides have been thus treated the uterus and tubes are free. If there are adhesions which interfere with the removal of the tubes they are ligated and removed later. After a careful examination of the area for bleeding the gauze holding back the intestines is withdrawn and the field is washed with ether or warm horse serum.

The peritoneum is then brought into the field of operation by gentle traction on the ligatures in the broad ligament which were left long. The anterior and posterior sheets of the peritoneum are closed the ligatures being kept extraperitoneal. The round ligaments and the broad ligaments are then sutured in the median line a good floor being thereby formed to guard against secondary prolapse. Closure should not be done if a pus tube is found. In the presence of a pyosalpinx closure is contra indicated and the cul de sac should be drained.

When the peritoneum is closed gauze packs soaked in horse serum are placed at the base of each broad ligament posteriorly against the rectum and anteriorly against the bladder. Between these four packs a drain is placed. A retention catheter is introduced into the bladder and dressings are applied.

The packs are removed after from forty eight to seventy two hours. The drain is expelled spontaneously. After the fourth day the catheter is removed and two daily injections of normal salt solution are given into the vagina. The patient is out of bed on the seventh day. The treatment is completed by several injections of a 1:1000 silver nitrate solution. If exuberant granulations are present they are touched up with lunar caustic.

The author does not claim that the operation described is entirely original. He states that he made use of many other techniques adding here and there an original modification. He stresses particularly the extraperitoneal placing of the sutures in the broad ligament.

The advantages of the technique described are that hamostasis is perfect necrosis is practically done away with there are no clamps no forceps are left projecting from the vagina the intestines ureters and omentum are always isolated and out of the way the peritoneum is closed and the ligatures in the broad ligament lie below it adhesions do not occur the postoperative course is smooth and painless the exposure is excellent the ovaries may be preserved adhesions may be dealt with shock is minimal there is no external scar and no danger of eventration and the operation is shorter than the abdominal hysterectomy.

In the 123 cases in which this operation was performed there were no postoperative deaths. Most of the patients were up on the seventh day. One patient developed a bilateral phlebitis but was out of bed at the end of a month. Except for cases of malignancy a cure was obtained in every instance. There were seventy five cases of fibroma seventeen of fibroma with non suppurative disease of the adnexa eleven of fibroma with suppurative disease of the adnexa four of prolapse eight of carcinoma of the cervix and four of carcinoma of the fundus.

The author regards vaginal hysterectomy as the operation of choice for old women whose resistance is low those exhausted by hemorrhage and those with disease of the adnexa. It is of value also for the removal of fibromata which are situated at the base of the uterus and are not too large and

period in its cycle the degenerated corpus luteum is inactive. Cases of habitual abortion have been very successfully treated with corpus luteum extracts.

The interstitial hormone causes a secretion of the posterior lobe of the pituitary gland which renders the uterus supersensitive and highly responsive to other forms of stimulation. That the pituitary gland has a relation to pregnancy is shown by its greater weight in women who have borne children as compared with nulliparae. The interstitial hormone is liberated during only one stage of the ovarian cycle—that of degeneration of the corpora lutea. Therefore it is present in the ovary just previous to parturition and just before the heat periods. Mayer states that during labor the cerebrospinal fluid contains the active principle of the pituitary responsible for the production of uterine contractions.

During the periods of heat and during pregnancy the corpus luteum so dominates ovarian metabolism that the ovarian secretion which at other times activates the pituitary is inhibited or neutralized by the secretion coming from the corpus luteum. At the termination of pregnancy the normal secretory activity is again produced and the pituitary gland is stimulated to secrete in greater quantity, thus explaining the increased irritability of the uterus and the occurrence of labor.

MAGNUS P. URNES, M.D.

Hunt V. C. and Simon H. E. Carcinoma of the Ovary in Infancy. *Ann. Surg.* 1918, 66: 84.

The case of a girl seventeen months of age is reported. One month previous to the patient's admission to the hospital a blood-tinged vaginal discharge was noted. This lasted only a few days. Two weeks later a mass was found in the lower part of the abdomen.

Except in size the child's development corresponded to that of puberty. The breasts and external genitalia were well developed and there was a firm growth of hair in the axilla and on the labia. A slight blood-tinged vaginal discharge was present. A large, smooth, freely movable mass occupied the lower part of the abdomen. At operation the tumor was found to have its origin in the right ovary. There was no evidence of metastasis and the uterus and opposite ovary appeared normal. Following its removal the tumor was found to weigh 1,000 gm. and to measure 11 by 15 cm. It was diagnosed as a carcinoma of the ovary.

The special symptoms associated with ovarian carcinoma and with other type of ovarian tumor in children are the age of pubertas præcox. This is true homosexual precocity, the breasts and external genitalia develop and changes in fat distribution occur over the body in a manner similar to that which is normal at puberty. Simple cyst, dermoid cyst, teratoma, sarcoma and carcinoma of the ovary have been observed in association with pubertas præcox and there are no characteristic clinical data upon

which a differential diagnosis can be based. The evidence at present is not sufficient to justify the removal of an apparently normal ovary from a child if the other ovary contains a malignant tumor. Neither is it sufficient to warrant an opinion as to the ultimate prognosis.

MISCELLANEOUS

Meaker S. R. A Working Classification of the Causes of Sterility. *J. Am. M. Ass.* 1918, 70: 111.

Since there are six major requisites of fertility the causes of sterility fall naturally into six main groups. The latter are shown by the author in a chart.

Many uterine abnormalities not in themselves causes of sterility are associated with conditions in other parts of the genital tract which render conception impossible. For example, pregnancy fails to occur in the infantile uterus not because it is an infantile uterus but because the infantile ovaries do not ovulate.

Failure of the semen to be delivered directly into the cervical canal usually results in failure of pregnancy.

All grades and degrees of fertility are known. Chief among the conditions leading to the formation of relatively infertile ova or spermatozoa are gonad underdevelopment, depressed constitutional states and endocrine failure.

Gonad underdevelopment is common in the generative organs of the female but not in those of the male. Many women show juvenilism.

Most frequent among the depressed constitutional states are the defects of metabolism due to extrinsic causes such as faulty diet and lack of exercise.

In sterile women the primary focus of endocrine failure is located more often in the pituitary and thyroid glands than in the ovary.

Successful treatment of sterility must be preceded by a thorough and systematic investigation in which every possibility is taken into consideration. The acceptance of the first discovered abnormality as the cause of the condition has led to many therapeutic blunders. T. LOYD BELL, M.D.

Robins S. A. Cystography as an Aid to the Diagnosis of Pelvic Lesions in the Female. *Am. J. R. entg. nol.* 1927, 1: 546.

Various abnormal densities in the soft tissues of the pelvis frequently noted in roentgenograms prompted the author to make a study of the female pelvis utilizing the cystographic method as a diagnostic aid. Over 300 cystograms of patients with various pelvic disorders were made. The following conditions produced characteristic changes in the bladder outline: (1) uterine fibroids, (2) displacement of a large and atonic uterus, (3) cysts, (4) tumors of the broad ligaments, (5) adhesions, (6) malignancy of the uterus, tubes or ovaries, (7) hydrosalpinx, (8) pelvic abscess, (9) pregnancy, and (10) ascite.

Definite information was obtained also with regard to the size, shape and tonicity of the bladder.

The cardinal signs of pelvic tumors are pressure defects, irregularity of contour and filling defects of the bladder. Uterine tumors and pregnancy produce typical crescentic pressure defects on the dome of the bladder. Pressure defects caused by ovarian cysts, tumors or lesions in the fallopian tubes and broad ligament are usually seen on its lateral wall. A straight pressure defect is suggestive of inflammation to changes. In a series the shape of the bladder is quadrilateral. Various pressure defects on the posterior border of the bladder are caused by multiple fibroids. Irregularity in the contour of the bladder usually due to adhesions. The shape of the bladder varies considerably. The normal bladder appears as a pyramidal or rounded smoothly outlined organ in the center of the loe pelvis. The hypertonic type of bladder is rounded and small although sometimes its capacity may reach 400 cc. The atonic bladder broad and thin, flattened and it has the appearance of an inverted mushroom. The tubular bladder usually of large capacity.

The technique of examination used by the author is described in detail. A film is made when the bladder is empty and after it has been distended. The 35 per cent solution of sodium diatrizoate is used after part of the solution has been withdrawn. Numerous roentgenograms illustrating the different conditions found are included in the article. A. H. M.D.

Schlink H. H. Pelvic lymphangitis of the Role of the Lymphatic in Pelvic Inflammation. *Med J* 1917 97 S pp 4438.

The author refers to the distribution of the lymphatic in the female pelvis with peculiar attention to the minute anatomy of the lymphatic system. He states that the general principles underlying bacterial invasion of the female pelvic organ are similar to those of the male and no peculiar infections except that in the former the infection is limited here; the latter is the cervix, the uterus and the vagina.

As the gonococcus is the organism most commonly causing pelvic infection and its mode of invasion is typical of that of all other invading organisms, the development of gonorrhea is discussed in detail particularly in the case of the acute gonorrhea of the cervix. The causation of the infection into the uterine

cavity are menstruation, physical overactivity, excessive coitus, curettage, conditions produced in the puerperium. The particular site attacked depends upon three factors: (1) the resistance of the antitoxic mechanism of the host; (2) the number and virulence of the invading organisms; and (3) the direction in which and the rapidity with which the organisms are carried along the lymph channels.

The author is of the opinion that the invasion occurs by way of the uterine cavity in acute fulminating infections which result in general peritonitis or pyosalpingitis and by way of the lymphatic circulation especially in chronic and subacute infections.

With regard to the treatment of pelvic infections Schlink advises: (1) the abandonment of antiseptic douches and rectal irrigation; (2) improvement of the general health and avoidance of conditio puerperalis; (3) the use of the pelvic organs; (4) the use of hot douches and sitz baths; (5) the use of vaginal tampons of glycerine and iodine; (6) general treatment with vitamins; and (7) enucleation of the cervix when other treatment fails.

MAGNUS P. U. M.D.

Battlmy Fibrous Pelvic Peritonitis (Leptothymia) B. S. d. b. t. t. d. g. d. P. 97 53.

The author calls attention to a fibrous pelvic peritonitis localized in the adnexa not involving the intestine (except the appendix in one case) nor the mesentery and appearing in young nulliparous women without a suggestive history. In all of the cases reviewed it was the retrodeviation which attracted the attention of the examiner, the adnexal region being practically negative to palpation. Manual replacement was possible but as it was painful and not permanent operation as performed.

It is apparent that the retrodeviation was secondary to an agglutinative process which had caused a posterior fixation of various parts of the adnexa. The tubes were uniformly involved at the ampullary end by a process of chronic inflammation with sclerosis and obliteration of the tubal lumen. In every case an attempt was made at operation to reestablish the patency of the tubes.

The statistics of the condition are the definitely localized as compared with apparently econlogically retrodeviation.

G. C. C. SCHAUFF M.D.

OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

Kadjar M K. The Study of the Placental Circulation in Multiple Pregnancies by the Stereoroentgenographic Method (Contribution à l'étude de la circulation placentaire dans la grossesse multiple par la méthode stéréoradiographique) *Gynecolog* 927 xxi 449

The author states that the radiostereoscopic method is indispensable in the study of the placental circulation as it permits the certain recognition of the deep anastomoses. By the use of this method anastomoses may perhaps be found quite often in bivittellin pregnancies. ALBERT F. DEGROAT M.D.

Walker A. A Case of Rupture of the Uterus After a Previous Cesarean Section. *Proc Roy Soc Med Lond* 19 8 xvi 365

The author reports a case of uterine rupture at approximately the thirty-ninth week of pregnancy eighteen months after a cesarean section. The sequence of events which led up to the rupture were apparently as follows:

1. A portion of the scar of the original cesarean section healed with intervention of fibrous tissue.
 2. When the uterus hypertrophied during the second pregnancy the scar tissue was stretched until it became thin.
 3. When labor began this thin area was pulled upon by the contracting uterine muscle in all directions until it gave way slowly at the center.
- ALBERT W. HOLMAN M.D.

Dougal D. The Clinical Features of Ectopic Pregnancy. *Brit M J* 927 ii 1074

Dougal reviews the clinical features of ectopic pregnancy in the 100 cases. The chief predisposing cause of the condition is a pelvic infection which obstructs or delays the passage of the fertilized ovum to the uterine cavity. Other factors of importance are developmental abnormalities. One third of the patients whose cases are reviewed had not had a previous uterine pregnancy.

The combination of the cardinal symptoms of amenorrhoea, irregular uterine haemorrhage, and abdominal pain was found in 6 of 10 cases. In the acute cases a rather constant symptom is shoulder pain due to haemorrhage into the peritoneal cavity. The abdominal pain varies from a colicky pain associated with the unruptured tube to an acute lancinating pain occurring at the time of tubal rupture.

If the physical signs are not conclusive, examination under nitrous oxide anaesthesia should be considered. The condition must be differentiated from appendicitis, threatened uterine abortion, inflam-

matory tubal swellings, and small ovarian and broad ligament cysts.

Immediate laparotomy is advocated except in cases of profound shock. The gravid tube should be removed but not the other tube.

Because of early diagnosis and operative intervention there were no deaths in the 100 cases reviewed. MAGNUS P. URNIS M.D.

Lacouture J. and Massé I. A Child Two and a Half Years Old Born of an Ectopic Pregnancy (Présentation d'un ectopien âgé de 2 ans 1/2). *Bull Soc d'obst et d'gynec de P r* 92 xvi 666

Not many children born of ectopic pregnancies survive. Of 303 such children whose cases were reviewed by Baronnet, 58 per cent died within the first twenty-four hours after birth, only 13 per cent lived to be more than five years of age, and one third were malformed.

The child discussed by the authors, a girl weighed 450 gm at birth. Her only malformation was a considerable asymmetry of the face. She is at present normal in height, weight, and mentality, and there has been no retardation of dentition or walking.

Harris is quoted as stating that if a child born of an ectopic pregnancy lives as long as a month, it will probably continue to survive.

AUDREY C. MORGAN M.D.

Walker A. Diabetes Mellitus and Pregnancy. *Proc Roy Soc Med Lond* 1928 xvi 377

Walker states that while diabetes must be regarded as a serious complication of pregnancy, there seems to be no reason for terminating the pregnancy or for the belief that the child will not be born alive if the patient is treated with insulin and properly dieted. Puerperal complications occur no more frequently, and the pregnancy does not appear to have any ill effects upon the diabetes. In one of the author's cases insulin treatment was apparently the means of curing sterility.

ALBERT W. HOLMAN M.D.

LABOR AND ITS COMPLICATIONS

Bailey H. and Williamson H. C. Trial Labor as a Procedure in the Treatment of Patients with Contracted Pelves. *J Am M Ass* 19 7 lxxix 203

Maxwell A. F. A Study of Labor in Contracted Pelves. *J Am M Ass* 19 7 lxxix 2038

Bailey and Williamson report that in 11,491 deliveries in the Cornell teaching service at Bellevue Hospital and the Berwind Clinic during the last five years pelvic contraction was found in 676 cases (5.9 per cent). With the exception of 5 cases of

TABLE I—TYPES OF PELVIC CONTRACTION

	C	M	I	L	F	M	F	I	I	
		7			9	5		3		
			4			8		6		
			3			6				
I	(5	3		86	3			3	
			8		5		5			
			8	8	5					
			8	5	5	85	3			

TABLE II—TYPE SOI DELIVERY

0 h c d

TABLE III—STILLBIRTHS AND NEONATAL DEATHS

[illegible]

TABLE IV—METHOD OF DELIVERY IN 241 CASES OF CONTRACTED PELVIS

[illegible]

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cesar a sect n l ne the om n e given a
tr all b I 661 r ce t l h e v p nta o
Nine l i t t h s per n t f t h ope nti de
l verie r q ed us an ct In the nti e
serie the e re o ly 3 de th T of the l aths
occur el n th p ati e g up

[illegible]

In the 66 cases recorded in the laboratory, the incidence of catarrh of the rectum was 4 per cent. There

There were no deaths from the procedure. The maternal mortality in the entire series of cases was 0.44 per cent, the gross fetal mortality 6.2 per cent and the net fetal mortality 4.4 per cent.

The type fecal excretion and delivery and the tubercle and neonatal death are shown in Table I, II and III.

MAXWELL has made a study of the effect of physical contractions on the outcome of labor in 6500 cases of delivery in the Obstetrical Department of the University of California Hospital.

The overall prevalence of *S. flexneri* in the clinical specimens was 3.9 percent, but when the prevalence increases the hazard of paratuberculosis of the baby term (average 3.478 gm) increase the cephalopod population. The authors suggest that one of the reasons for the small prevalence is a potential candidate for

TABLE V—RELATION BETWEEN THE TYPE OF DELIVERY AND THE MORTALITY

D l y		C	M t l m l t y	F t l m l t y
Spo t		109		7
M d f		47		8
H g h t	p		3 3	46 6
C r s	p e c t	5		
V		3	66	
P b t m y				∞
T i l m a t	l m t l t y	o r	f t l m t l t y	9 0

operative delivery. Therefore every patient should be given detailed instructions as to the proper hygiene of the birth canal in the last month of pregnancy.

Maxwell emphasizes the importance of realizing that test by labor has vaguely defined time limits. The true test begins only when the cervix is completely dilated. This test is a test of accomplishment and should not be prolonged beyond the limits of the patient's endurance. Cervical rigidity, weak, infrequent uterine contractions, and occiput posterior presentations prolong labor, weaken the woman's power of resistance, and cause exhaustion before the value of the trial by labor can be determined. A tremendous fetal and a considerable maternal mortality will result from the use of high forceps. This procedure should therefore be discarded. However, because the author's review extends back for more than ten years, this was in many instances the only method possible when maternal exhaustion complicated delivery.

More recently the advantages of low cervical section in the cases of potentially infected women have been emphasized and experience in a few cases justifies its adoption. The present policy in the management of contracted pelvis in the University of California Medical School is conservative. The patient is allowed to go into natural labor the progress of labor is determined by rectal examinations only and in the event of unsatisfactory progress the child is delivered by a low cervical section.

The method of delivery in 41 cases of contracted pelvis is given in Table IV and the relation of the type of delivery to the mortality is shown in Table V.

ROLAND S. CRON, M.D.

Huntington J I Irving F C and Kellogg F S
Abdominal Reposition in Acute Inversion of
the Puerperal Uterus *17 J Obst & Gynec*
98 34

This article reports five cases of inversion of the uterus occurring immediately after delivery. All were treated by abdominal operation. Recovery resulted in every instance.

In the technique used by the authors the abdomen is opened by a low median incision. If there is complete inversion the uterus is absent from the pelvis and there is a crater in the region of the cervix into which the tubes, round ligaments and occasionally one or both ovaries have been drawn. The

operator and his assistant are both armed with two Allis forceps. Each inserts one of his forceps into the crater for about an inch and grasps the surface of the uterus on his side. Both draw upward simultaneously pulling a portion of the uterus out of the ring and restoring it to the peritoneal cavity. Steadying the uterus by the forceps already applied the operators then insert their second forceps into the crater for about the same distance as before and again grasp the sides of the uterus and pull upward. Thus by successive bites and upward traction the uterus is gradually restored to its normal position.

ALBERT M. VOLLMER, M.D.

Grimault L I ow Caesarean Section by the Extra
peritoneal Route Following Rupture of the
Membranes with Infection (Cl arienne basse
oeuf ou ert et infecté temp sept que extra
péritoneal) *Bull Soc d ob t et d gynéc d Par*
027 1 494

The author reports three cases in which he performed a low caesarean section following rupture of the membranes with infection. In his technique for infected cases the peritoneal cul de sac is separated from the bladder by a horizontal incision in the cellular tissue which unites them. The peritoneal cul de sac is then slit vertically so as to give free access to the lower segment of the uterus and the parietal and visceral folds are sutured together so that instead of one horizontal cul de sac there are two vertical culs de sac and the peritoneum is closed before the uterus is opened. For clean cases Grimalt prefers the classical caesarean section.

AUDREY G. MORGAN M.D.

NEWBORN

Crowther W L Hæmorrhage of the Newborn
Med J Australia 1971; 1: 873

Hæmorrhage of the newborn may be due to trauma from instrumental delivery or the natural forces of labor pathological conditions such as congenital syphilis duodenal or gastric ulcer or sepsis neonatorum or the hæmorrhagic diathesis (idiopathic hæmorrhage).

The groups of cases can be differentiated by noting the bleeding and coagulation times. If both are normal the hæmorrhagic diathesis is excluded. The bleeding time as determined by the puncture method of Rodda should range from two to five minutes. In idiopathic hæmorrhage the oozing may continue for hours or even days. The coagulation time is normally from five to ten minutes. In idiopathic hæmorrhage it ranges from thirty to ninety minutes. The hæmorrhagic diathesis of the newborn is due to some grave alteration of the blood formula which changes the blood coagulation. Proof of this lies in the fact that the subcutaneous introduction of from 5 to 10 c. cm. of whole adult blood will control the hæmorrhage and cause a coincident return to normal of the bleeding and coagulation time.

ALICE J. MAXWELL, M.D.

Sci weize F Complete Obstetric I Paralysis of
the R gl t Brachial Ilexus and the Right I l n c
Nerve in n Infant Two and One Half
M nths Old (Pa ál s b tét mp) t ph v l
b q l d h y p ál d l f d ch
f t t d me l d d) Sc m d
9 7 98

The autho pos ts th ca of an i fant t o and
one half m nth ol l h as suff r ng f om com
pl te brachial par l sis on th r ght sid and con
st nt dysp oea th p l y n x Th dyspnoea and
poly p n x a not v marked he the chl l
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ment th re p r t i r ch d 7 pe m nute a l
th r a transit r van sis

Electr cal xam nat n showed th eact n of
d ene ation in all of th mu cl of th ght arm
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MISCELLANEOUS

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61 and n 925 64 pe 10 l i e b i th s

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puerpe al infection 7 p cent to pu pe al
albuminu a a d n lion 3 pe cent to the
accidents of p e g n c v cl ding ab tion ectop c
pregnancy puerpe l h aemo hag embolism pue
peril phlegmas a alba tole s and ce t r n il
defined c u es and o per cent to i strum t l
d l ier ies d s gic l p cedures such s cae ar a
se tion

A compa on f th n mbe of b i th s n the
case of wom n c ed f r b v ph y c n and m i l
v i es with the tot l m tern al d ath in the ame
geog aph cal are ho e l th t the mid if i not a
dominant fact i the p e nt h g h maternal
mortality rate

To reduce the maternal mortality rate the
author proposes more hospitalization of confine
ment cases in order to eliminate puerperal septi
cæmia and assure safety in operative procedures
bette training of medical students in the science of
ob tetric the e porting of all ca es of puerper l
j ticaemia and e tens on of facilities for pre at l
care and supervis on \ RAHA t \ B AUT M D

MacMurchy H Mate nal Mo tal ty in Canada
C d M l s J 9 7 v 434

With the co pe tion of the members of the
mel cal p o le s ion th provinc al author ties and
the Dom nio Bureau of Stati tics the Mini ter of
H alth of Canada ma le an inquiry into the mater
nal mort l ty n Canada in the pe i od f om Dominion
Day 925 to Domi ion Day 1926 As the result
of th s i est gati n there are now on file 11 000
fficial return — e cor l of the d aths of all women
bet ve fifteen and fifty yea s of age v ho died in
that yea togethe with the name and address of
the ph y cia or other per on gning the death
ce tific te It wa found that in the fifty n
ve r of the Confe leration the v ere 153 mate l
deaths approx mately 6 per r ool l ing b th s

The h to es of the 53 mothers ho d e l
h e i that the health of 72, f them a ot good
The following con l itions were eco l d

Gene al health poo or ba l	153
Card iac l ex	26
Influen a l pneu m n a	13
Iu er ulo	96
E hau ted from ca e of h me d children	61
Ex hau ted from w t f sleep d rest	2
Exhausted fr m t frequent pregnanc e (such a s ch ldre in 6 ye)	26
Tot l	27

The cruse of de th as g en as card ac d i se
n o o a es (1 per cent) p s in 4 b (7 per
ce t) hem r h g e in 357 (3 per cent) to æmas
of p e g c v n 344 (per cent) al long and h rd
lab r i 87 (5 p r c t) Ne rly all of the d th
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No doctor was in attendance in 237 cases (15 per cent). This number includes 48 (3 per cent of the total number) in which a midwife was in attendance. In nearly every instance the midwife was untrained and in some of the cases she was directly responsible for the death.

Only 230 of the 1,532 patients had prenatal care. In 128 cases the doctor was not called until labor had begun.

In 1924 the total number of births in Canada was over 244,000 and 38,634 (16 per cent) occurred in hospitals.

ROLAND S. CROW, M.D.

MacDowell E. C. and Lord E. M. *Reproduction in Alcoholic Mice. I. Treated Females. A Study of the Influence of Alcohol on Ovarian Activity, Prenatal Mortality, and Sex Ratio* (Fortpflanzung alkoholierter Mäuse. I. Behandlung weiblicher Mäuse. Eine Studie über den Einfluss des Alkohols auf die Tätigkeit des Eierstocks, die Sterblichkeit vor der Geburt und das Verhalten in der Geschlechter). *Arch. f. Entwickl. u. Gesch. d. Org.* 1927, cit. 549.

Attempts to solve the alcohol problem by experimentation suffer most in the authors' opinion from the subjective prejudices of investigators. Of the enormous literature on the subject only a little is really of value when complicated questions of reproduction, development and race come under consideration. In experiments on animals it is forgotten that the organism on which the experiments are performed is as complicated as alcohol is chemically simple. The chief difficulty in experimentation is the elimination of the variations due to this fact. The influence of alcohol on the animal is still a problem in itself and as animals react very differently to alcohol no conclusions applicable to man can be drawn from them.

Before the influence of alcohol on offspring is considered it is necessary to determine whether the decrease in offspring claimed by many investigators to result from alcoholism rests on prenatal death, disturbances of ovulation or a reduced liability to conception.

The investigations reported in this article were limited strictly to the mating of alcoholized female mice with sound male mice. The strains of mice used had been bred in the laboratory for a long period of time and their origin and blood relationship were known. In the case of each female the date of opening of the vagina and the duration of rut were recorded. In each gravid animal the exact number of ovulation and littering periods was determined by examining the ovary exteriorized through a dorsal incision under ether narcosis between the twelfth and twentieth days of gravidity. Under a binocular microscope the corpora lutea graviditatis which may be easily distinguished from old corpora lutea were counted and the number of dead fetuses was calculated from the difference between the number of the former and the number of living offspring.

The sex of the newborn was learned from a red fleck between the anus and the genital papilla in the

female and the projecting scrotal ridge in front of the anus in the male.

The alcohol was administered in the form of vapor from alcohol saturated blotting paper that was placed with the mouse under a bell jar for various lengths of time—up to forty five minutes for slight intoxication and five times a week until there was loss of consciousness for severe intoxication.

In one group of animals in each series of experiments the alcoholization was stopped during the last week of pregnancy and in another it was continued to delivery.

Comparison of the mice treated with small doses of alcohol vapor (forty five minutes daily beginning at the age of four weeks) with untreated sisters of the same litter led to the following observations:

1 The time between the mating and the birth of the offspring showed a tendency to increase.

2 Whether the opening of the vaginal orifice and the first estrus were delayed was questionable.

3 The duration of the estrus cycle, the number of corpora lutea, the size of the litter (male untreated) and the mortality before and during the birth showed no change.

In certain cases in which the estrus cycles had been determined before the treatment was begun the alcohol nearly doubled the length of the cycle. This effect was more frequent when large doses of alcohol vapor were given.

When female mice treated with doses of alcohol vapor sufficient to cause complete insensibility (five times a week beginning at the age of four weeks) and mated with normal males were compared with untreated sisters of the same litter mated with the same normal males it was noted that:

1 The treatment showed a tendency to delay the birth of the first litter and to increase the intervals between the births that followed when all of the young were killed at birth and the mother was at once mated again.

The number of corpora lutea per pregnancy was a little larger whether or not the treatment was stopped during the last week of pregnancy.

3 The size of the litter was reduced by about five tenths of a mouse when the treatment was stopped before the last week of pregnancy (Series A) and by seven tenths of a mouse when the treatment was continued to delivery (Series B).

4 Pregnancy in which no young were carried to term was somewhat more frequent.

5 The number of stillborn young was greater by about 4.5 per cent in Series A and by 9.4 per cent in Series B. The number of stillborn female was somewhat greater than that of stillborn males in both the treated and the control group.

6 The mortality before birth was raised by about one or two embryos per litter.

7 The ratio of the sexes showed no alteration. The percentage of males in 2,857 mice was 51.2.

8 The incidence of abnormalities in the young showed no change. The report is supplemented by numerous curves and tables.

FLESH (C)

GENITO URINARY SURGERY

ADRENAL KIDNEY AND URETER

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six cases anuria in two cases pneumonia in one case septicæmia in one case cervical neuritis in one case and abscess of the kidney overlooked at the time of the operation in four cases

Before renal surgery is undertaken a careful pre-operative estimate of the function of both kidneys should be made to eliminate patients who are poor risks. A painstaking pre-operative and postoperative care does as much to lower the mortality as good operative skill and judgment.

Many pitfalls associated with renal surgery can be eliminated by improvement in the operative technique. Excessive retraction and loss of blood must be avoided. Injury to the tissues may be reduced by a wide incision and careful dissection of the kidney from the pleura, liver, peritoneum and other viscera. In the liberation of the organ from the peritoneum which is in apposition to the pre-renal fascia blunt dissection should be employed. A wide crescentic incision beginning at the point of the articulation of the last rib with the vertebra and extending well anterior to the anterosuperior spine of the ilium gives sufficient exposure of the pedicle even when the latter is short and the kidney is high and is entirely behind the peritoneum. Incision of the costovertebral ligament allows greater exposure by permitting retraction of the ribs upward.

The space between the last rib and the crest of the ilium can be appreciably increased by the use of a stabilizer which raises the lumbar region from below, keeps the under leg firmly flexed and the upper leg extended and causes counterpressure on the abdomen from below. The high left adherent kidney is best approached by the extraperitoneal abdomino-thoracic incision.

In nephrectomy the renal vessels should be doubly ligated individually if possible. If they cannot be separated the pedicle should be doubly clamped *en masse*. A ligature should be tied above and below the clamp and the clamps released during the tightening of the ligature.

For the success of conservative renal surgery the elimination of stasis is essential.

L. C. CRUSS, M.D.

Verz H. Roentgenographic Measurement of the Compensatory Hypertrophy of the Kidney Remaining After Nephrectomy. (La mesure de l'hypertrophie compensatrice du rein restant après néphrectomie par la radiographie). *1 cl d f d s t d org n gé t urinaire* 1927 in 6.

Verz states that if two roentgenograms of a patient are made under identical conditions before and after nephrectomy it is possible to follow the contour of the kidney to measure the surface of the organ and by comparison to appreciate the increase in the renal area and hence the volume of the organ. In determining the surface of the roentgenographic image he uses the Hirtz method. His observations included twenty-six cases in which nephrectomy for renal tuberculosis had been done from several weeks to several years previously. Compensatory hyper-

trophy was found in every instance but the author's conclusions are based on thirteen cases in which the operation was performed some time ago and numerous subsequent clinical, bacteriological and serological examinations had been made.

These cases indicate that compensatory hypertrophy of the kidney remaining after nephrectomy is generally very marked, being evidenced by surface increases amounting to about 33 per cent. The kidney never doubles its volume. The hypertrophy involves the entire organ, the contour shown by the second roentgenogram following that shown in the first one and it being fair to assume that if the two visible diameters are greater the third diameter is also greater. The kidney often drops 2 or 3 cm. as it hypertrophies, the inferior pole being sometimes at the fourth lumbar transverse apophysis or at the iliac crease.

The hypertrophy appears within a few weeks after the operation and reaches its maximum in from twelve to fifteen months. It is lasting. The duration of the disease at the time of the operation is an important factor determining the amount of the increase. If the disease was present for some time before the operation the healthy kidney had some time to make up for the deficiency of the diseased kidney and its postoperative increase in size will therefore not be so great as if the disease was present for only a short time. The hypertrophy is greater also in young subjects than in older subjects and in persons in good general condition than in those with other lesions.

The conclusions drawn from cases of renal tuberculosis especially as regards the influence of the degree of evolution of the condition at the time of operation were borne out also in twelve cases of hydronephrosis.

WILLIAMS

Carson W. J. Dilatation of the Ureter in the Male. Autopsy Findings. *1 J S g 197*
154

Of 185 consecutive autopsies on males ureteral dilatation was found in 23 (12.4 per cent). It occurred on the right side in 5 cases, on the left side in 4, and on both sides in 14.

The dilatation of the ureter was accompanied by hydronephrosis in 21 cases (88.5 per cent).

In 11 cases (47.7 per cent) the etiological factor was infravesical obstruction.

Ureteral stricture was found in 5 cases. In 4 it was inflammatory and in 1 congenital.

J. SYLVEY RITTER, M.D.

BLADDER URETHRA AND PENIS

Hortolomei. Bladder Wounds with Very Slight Symptoms. (Plaie d la vessie à symptômes frêles). *J d rol t d t cl t* 92 286

The author reports two cases of wounds of the bladder, one caused by shrapnel and the other by a revolver bullet in which the symptoms were very slight. In the first case the shrapnel entered the

implantations Beer opens the bladder with the radio knife and after coagulating the tumor with the current removes it with the cutting needle. Of thirty three cases in which this method was used 83 per cent were apparently cured. After the operation the bladder should be re examined regularly with the cystoscope. Washing of the wound with pure alcohol prevents new implantations because of the coagulation it causes. Beer has used the operative technique described in cases of carcinoma and papilloma. If the neoplasm is found to be non resectable he destroys it with radium. Apparently good results were obtained in 60 per cent of cases of papilloma and 35 per cent of cases of infiltrating carcinoma.

The application of radium emanations through the cystoscope gave apparently successful results in 50 per cent of the cases. The mortality was highest (33 per cent) in cases of non resectable tumors situated near or at the sphincter in which radium was applied in the open bladder. In only 6 (30 per cent) of 31 such cases was an apparent cure obtained.

In 17 cases of carcinoma in which deep roentgenotherapy was tried it occasionally caused an amelioration of the symptoms but in no instance resulted in a cure.

ANNA L. PACE

Ingebrigsten R. Cancer of the Bladder Treated with Radium. Cure of Seven Years Duration (Cancer de la vessie traité par le radium guérison depuis sept ans). *Bull et résum Soc nat de chir* 1917 121 1291

Ingebrigsten reports a case of cancer of the bladder that he treated with radium seven years ago. The patient still remains cured. The diagnosis was made by the Pathological Institute of the University of Oslo on the basis of a biopsy specimen taken at the time of cystostomy. The treatment consisted in the application for forty eight hours of 110 mgm of radium bromide with a filter corresponding to 3 mm of lead. The tubes were placed in contact with the tumor by tamponing the bladder. The bladder incision left open until after the removal of the radium healed normally. The patient left the hospital eight weeks after the treatment. In the two examinations that have been made since that time the last one in October 1927 no recurrence of the tumor was found.

ANNA L. PACE

GENITAL ORGANS

Hunt V. C. Immediate and End Results of Suprapubic Prostatectomy. A Consideration of the Factors Involved. *Can J U Ass J* 1927 11 1462

Certain changes in the management of benign prostatic hypertrophy of the prostate gland following suprapubic prostatectomy have resulted in a great reduction in the mortality and improvement in the ultimate functional results. Cardiovascular disease is as important a consideration in the immediate and

end results of prostatectomy as renal insufficiency. The chief essentials for the most successful treatment of surgical benign prostatic obstruction are pre operative treatment and accurately visualized operative procedures.

Recent investigation of the relationship of preliminary treatment to the mortality following prostatectomy has definitely established the necessity of such treatment in all cases. It has been shown that the mortality rate in the best surgical risks without preparation approaches closely that in the exceedingly poor risks requiring long periods of pre operative preparation and is twice that in the best surgical risks with the advantage of adequate pre operative treatment.

The important factor in the preliminary treatment is drainage of the bladder. This is accomplished more satisfactorily by means of the urethral or suprapubic catheter than by intermittent catheterization.

Drainage permits the recovery of renal function and stabilizes the cardiovascular renal reserve. It should be continued until the renal functional tests have become stabilized within normal limits and the general condition has improved to the maximum. In many instances the maximal safety of prostatectomy may be assured after a period of from ten days to two weeks of pre operative treatment but if the patient is in poor general condition with marked renal insufficiency it may be necessary to drain the bladder for months before the operation can be undertaken with any degree of safety. Experience has led to the adoption of a minimum of ten days drainage of the bladder even in the most favorable cases.

Usually suprapubic prostatectomy is performed in one stage but associated conditions such as vesical calculi vesical diverticula severe cystitis marked renal insufficiency requiring prolonged drainage and senility forbid the routine adoption of the one stage operation. In carefully selected cases adequate drainage of the bladder may be obtained by means of the urethral catheter and in 75 per cent of them this facilitates the one stage visualized operation which permits application of the general principles of surgery—adequate exposure accuracy of conduct and complete haemostasis.

The type of anæsthetic used is of importance in prostatic surgery. It has long been realized that in halation anæsthesia should be avoided. Regional anæsthesia approaches the ideal as it possesses none of the disadvantages of general anæsthesia and is devoid of the potential dangers of intraspinal anæsthesia.

The type of operation performed for the removal of the prostate gland unquestionably has some bearing on the mortality rate and ultimate functional results. The one stage operation which is readily applicable to 75 per cent of the cases is preferred. In certain cases the two stage operation is necessary to reduce the risk but it possesses the disadvantage of blind extirpation of the gland which sometimes results in incomplete removal of adenomata and

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Hæmostasis is of great importance in potter's toxicology. Of the various hæmostatic measures used to control bleeding at the vaginal neck and compression of the prostatic capsule have proved the most efficient.

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oral administration of pyridum to man they demonstrated that the seminal ducts of the dog do not excrete certain foreign substances introduced into the circulation. On the basis of this demonstration they attempted to influence infections of the seminal duct by means of chemicals introduced into the blood. In fifteen of thirty cases of non tuberculous prostatic esiculitis which were refractory to the usual medical treatment all evidence of infection promptly disappeared following a few injections of neoarsphenamine or sulpharsphenamine.

The authors conclude that in chronic prostatitis and its complications internal medication with arphenazine may decrease the number of operations which are performed for the condition because of the failure of the usual medical therapy.

CAMPBELL states that clinical and experiential observations in 3,000 cases of acute gonorrheal epididymitis admitted to the Urological Service of Bellevue Hospital, New York, indicate that the best nonsurgical treatment consists of rest in bed with splinting of the scrotal contents by an adhesive suspensory bandage and the application of an ice cap (without urethral treatment in gonorrheal cases). Epididymotomy afforded immediate relief from pain and is indicated in one of every fifteen cases. On the average the patient who operated upon in hospital for only three and seven tenths days is less than the patient who is not treated surgically. The prevention of postoperative scrotal haematoma is aided by a scrotal compress on both sides of the scrotum. Most complications result from secondary infection. Loss of the testis causes great anxiety. A careful follow-up and a definite limit of use of cases indicated that the results are less frequent than in the laterally divided organ subjected to epididymotomy.

THE CHESTER M.D.

MISCELLANEOUS

Helmholz II F Abnormalities of the U
Tat J 1 M 1 0718 93

The author does not merely to list a series of congenital anomalies of the urinary tract in childhood but to emphasize that such anomalies are probably often present in apparently normal infant and children by the pediatricist. They can be detected by careful questioning with regard to urinary flow and symptoms of a full ammonia-tonic and vegetable areas and the bjecting patient through polyuria that cannot be detected in the short period of intensive treatment. The complete urological examination. Only the case may be regarded before the picture is complete. The history is followed by the result of continued urinary biopsy studies.

SURGERY OF THE BONES, JOINTS, MUSCLES, TENDONS

CONDITIONS OF THE BONES JOINTS MUSCLES TENDONS ETC

Todd T W and Iler D H The Phenomena of
Early Stages in Bone Repair *11 Surg* 1927
LXXX 7 715

In their studies of the phenomena of bone repair the authors attempted to answer the following questions: What are the essential principles common to bone repair in different sites? Do all parts of the fractured surfaces and their immediately adjoining bone take part equally in the repair? What is the time relationship of the occurrence of the several phenomena of bone repair? Does the time relationship vary with the site or with the mammal? What modifications in the structure of repair are entailed by the type of fracture? What evidence is there of the site of origin of the definitive callus?

They first cite the findings of Sullivan Bast and Geist who studied the histological changes involved in bone repair in rabbits following saw cuts of the upper tibia. The findings of these investigators were as follows:

On the first day sections showed clotted blood filling the cut with giant cell about the bone splinters produced by the sawing. The cambium layer on each side of the cut was thickened by proliferation of its cells. The fibrous periosteum was oedematous. No endosteal change was apparent.

On the second day masses of fibroblasts began to organize the clot. The cambium layer was thickened on each side of the cut for a distance of from one eighth to one fourth of the bone circumference. Proliferative changes began to appear in the endosteum.

On the fourth day new bone was present as dentations under the cambium layer and as long slender coalescing spicules extending into the marrow cavity.

On the fifth day cartilage surrounded by fibroblasts appeared external to the cambium layer. Absorption of bone began beneath the external callus which itself appeared more cancellous than before.

On the sixth day internal callus completely bridged the cut and extended into it.

On the seventh day the external callus was extending into the then more advanced erosions of the cortical bone.

On the eighth day this union of the external callus with the eroded cortical bone became more intimate and the internal callus showed signs of dissolution.

On the ninth day the external callus also had entered the cut and many osteoclasts were visible in both the external and the internal callus.

On the tenth day the external and internal callus had joined within the cut.

On the twelfth day the definitive callus had become cancellous. The external and internal callus

were reduced in amount and more advanced absorption of the old bone was visible on the surface of the old cut.

On the fifteenth day new bone completely filled the cut. There was transformation of the new bone by a process which did not require the presence of osteoclasts and embryonic fibroblasts lay over the external callus parallel with the bone surface indicating the direction of future periosteal fibers.

On the sixteenth day erosion was still marked in the old bone surfaces and the external callus was much reduced. A line of osteoclasts was observable under the cambium layer.

On the seventeenth and eighteenth days this excavation of old bone continued and the erosions were rapidly filling with new bone. The new bone was taking the form of haversian systems.

On the twenty first day the external callus was entirely removed and even the bone plate in the cut was reduced in thickness.

On the twenty fourth day the internal callus had almost entirely disappeared.

From these findings and those of their own investigations the latter including a study of the skeletal material found in the Hamann Museum of Western Reserve University the authors draw the following conclusions:

The two processes going on side by side in fractures without mobility of the fragments are erosion and proliferation. Callus begins to appear on the fourth day and erosion is apparent by the fifth. In normal actively growing bone there is an essential exaggerated vascularity in response to the increased demand on the part of the bone for more than ordinary nourishment. This phase is compensatory rather than causal.

It is obvious that osteoclasts are not absolutely essential for absorption since erosion is found in their comparative or even total absence.

Failure of the phenomena of bone repair to develop is related to the patient's age.

When periosteum is elevated from bone adjacent to a fracture the bone often suffers a reduction in its vitality shows no erosion and takes no active part in repair. Such bone is not dead but ultimately becomes incorporated in the new structural bone.

Free movement of fragments does not inhibit the normal repair process but if fractured ends of low vitality rub against each other—and bone fragments cannot rub against each other without reduction of their vitality—friction facets similar to the occlusal and interproximal facets of teeth are speedily formed. Such facets develop within two weeks after fracture and are usually described as polished or eburnated areas. They are found most often in rib fractures but may appear in fractures of the long bones.

Endo t um o cancellous tissue is of great im port a e n bone r pair As compared v th endos teum and th e mb m lav r compact ti ue takes but little p t n th f rmat of new b ne t acts as a scaffolding p h h th n bone is laid do n

Bo e r pai is qui k t he e cancellous t ssue is relat v lv m st bo lant and m b lty is slght or absent a th v rt br x d n fssur d nd green t k f ctur r j r qu k t

I S MD

Keitl Si A C n n ng th O g n nd Nature of
O r bl ts P I S M L L I g

Keth l rib the e p me h g the f m n ft loie nlar otomy u l f th j ga t i g A of the l t ratu e dem n r tel th t n tl v f u t i f th rty ca s s h t e f m t oc ei lapa t m y o l m lein e r the p a umbil c part of the nea lla Th u cum f the R l c l leg f Surge n contr j cci f hete t p c bon formati n o g s an l pat ha i g direct o necti n th th k l t l v tem A att mpt made t xplai uch b f rmat n o th ba f the t aditi n l concept il g o th that it the k fa spec l d ell m lly c n f n l to the kelet i v t m

The co cl n lra th t the l terotop c form t f b t b pl ed unles t b acceptel sal at d by Lench that i certain st te cell of t ue o th r tha th skeletal t ue can bec me t bl te n n t ur and ct n—

s p p t d by th result f many recent x per me tal n e t g t n The v e ad ocate l th v t el th t n ot oblat riefom the capill v v tem—e pec lly fr m bud th n ut by th t v tem hen a neighb g sub t ce body to b l s bel Keth r e iew certai nec r v c l t ois but admts that full and sat factory xplanat n of the m re frequ toccu e e f h et ot pic b nef m t n i s p a umbil cal scar a mpa e l v th se in th r pat f th v b lom ha ot v et be n ea lei

H L C C V MD

Pi k L Tl An t m c Ro ntgenol gical D f f nt l Dagn s of S ypl i and Fib ou Dy tropi of tl L ng B n (Z r t m h t l m h D f f t l d g l S ph l i ub D t ph d l h k h) / t all f c j 9 l 3 9

Of th l e t c d as of th l ng bo s the d ffuse hype t t f r m m t b d f f r n t ted f m f b ot l st ph v (Paget di as o t e t s fibr) Th c d t n u s n acq u r d g d l te co g t llue and lke e u s vph l g e l att a k mot f r qu n tly the t b ad u an i uln The n l e d b es ar d e bl thick d partly cl r t c p a l po o t a l h e u soft n f c The m d llary ca t v i mo e

or less filled by a spongy new growth The pen o teum is al avs in olved sometimes more than the bone

Fib ou s o teody stroph v has no relat on to d ffuse hyperostic bone v phili and is not as is some times ssumed a ma lfestation of late here l tary v phili or a para v philitic disea e Each of these co d t ons h s a d i nct h stolog cal cour end result a d ntg n p ctur Luetic osteit s and hyp rostotic osteomyeliti a e characteri d by a ch nge of the marro nto granulation t ssue wh ch pro id for r orpt on and e format on of bone In fib ou s teody str ph v the marrow is changed nto f brous t ue esop tion of bone occu s thro h th act on of g nt c lls and new bone is formed as o te d t i u

An th c d f f ren e s the nature of the involve me t of the p r steum In fibrous osteodystrophy the bon ch nges o far as the perio teum is co c r d o c u r in one stage

A th r d i f f en ce is the change in the marr v t In fibrou ost odysr ph v this cavity is til l th fitty r d marro v h il in the luetic c d t n it s more or less replac d by ne lv f r m d sp v bo

A f th d f f c s that in the luet c d ease th i c a e i the length of the bone is a result of inf m mato v t m u f t r n of th epiphys al cartil g nd b i ng is the result of the el g tio I fibro s osteody trophy the inc ease in length is the r l t of total nt rnal ove productive cha ge in st uctur

Th pathologica natomical differences may be se n d i n tly in the ro ntg n picture Therefore a ro ntgen xam i t on i of sp c l value hen other l al a l su h as the h to y and the Was er mann t e d oubful H ch (Z)

H h E F and Ry rson E W Metast es of the B ne in P im ry Carcin ma of th Lu g AR l w of S C l d Endotheliom t of th Bon I I S g 9 8

Meta ta e to bo occur in a large umber of ca e f primary a oma of the lung a d in meca the sym pt m s c u ed by the b e t um r s lom i at th clin al p ctur

The autho s rep t the ch l cal cours a d autops y i n d i g s n f ur case wh ch the bo e met st ses c u d the h e f s mptom I t the sec nd a v tumo em v e l s g eall d g l f e h d been l agno d p r ma y end thel omata of the bo e I n a th t of b v ho a s t v s o f ge h h l d d agno i of metastatic c inom of tl t f t b i a made a year before death but at tl t t m a c ful phys cal ex m tion f l e d t d cl the p r ma y t m

A v a l v of the po t of so call d end thel o mata f b n tem nst ate that m v of th se o p t a e b e d n a study of tissue remo g c l l m c e h h n autops v a o p r f m d l t e o r o d o e th ufficie t c r r e l p r mar carcino na of th l g

Metastatic carcinomata of the bones are easily confused with other bone tumors. Therefore a diagnosis of endothelioma of bones in surgically removed tissues containing cells resembling epithelial cells in the alveoli and tubules should be checked by a thorough postmortem examination in which all parts of the body are carefully examined.

H FABLE CONWELL M D

Walsley T. The Articular Mechanism of the Diarthroses. *J Bone & Joint Surg* 1928 40

Diarthroses serve two functions—weight transmission and movement. The first is secured by the articular mechanisms, the second by the muscles. By the articular mechanisms diarthroses are functionally transformed into synarthroses and transmit weight without active contraction of the muscles.

At the hip flexion is limited by extra articular factors, but extension is definitely limited by two articular mechanisms. As the capsule is twisted and shortened it forces the head into the acetabulum like a screw until at 15 degrees of hyperextension the surfaces are congruent and the joint is locked. The head and acetabulum are not spherical, but so shaped that their surfaces can be congruent only in hyperextension.

W P BLOUNT M D

Smith R. The Relation of the Surgical Pathology of the Right Lower Quadrant to Arthritis. *J Bone & Joint Surg* 1928 57

Taylor R G. Surgical Lesions of the Right Lower Quadrant Demonstrated in Patients with Chronic Deforming Arthritis by X Ray Opaque Meal Examinations. *J Bone & Joint Surg* 1928 x 6

SMITH discusses particularly the relation of cæcal stasis to polyarthritis.

Clinical evidence indicates that chronic polyarthritis is due to the absorption of bacterial toxins or toxic metabolic end products due to an unbalanced ileocaecal flora dependent upon ileocaecal stasis and an occasional shower of bacteria from the same source. In the presence of a mechanical block of the cæcum it is almost impossible to change the flora to normal, but after removal of the block the same dietary treatment which failed to influence either the flora or the symptoms before the operation will result in cessation of the pain stiffness and contraction due to the arthritis. In Smith's cases the following examination and treatment are given:

1. The ordinary sources of focal infection such as the teeth, tonsils, sinuses and pelvis are investigated and if necessary cleaned up.

An X ray examination is made of the gastrointestinal tract to determine its mobility and motility, special attention being paid to the ileocaecal coil.

3. A balanced diet is given for forty eight hours in order to obtain a standard for comparison and on the morning of the third day a stool smear is obtained from a freshly collected specimen.

4. If the stool examination shows unbalance and the X ray reveals no gross pathological condition the patient is placed on a medical regimen designed to restore the normal intestinal flora.

5. In cases with distinct cæcal block and prolonged cæcal stasis the medical treatment is preceded by operation.

After the stools have become normal and the joints cold any type of operation or manipulation can be performed on the joints without causing a reaction.

TAYLOR states that in roentgen studies of the gastrointestinal tract in cases of chronic deforming arthritis he has found the best procedure to be the use of the single meal followed by immediate observation and observations at six, nine, eleven and twenty four hours and every twenty four hours thereafter until no further information is obtained. In some cases these observations should be followed by an enema and in the majority a dye study of the gall bladder is advisable.

The best evidence of obstructive lesions in the ascending colon, ileum and cæcum and of the motility and mobility of these portions of the intestinal tract is obtained at the nine hour observation. The only satisfactory way to demonstrate such lesions is to examine the patient under the fluoroscope in the standing position. The most important factor responsible for stasis is a twist in the ascending colon. When the cæcum is dropped into the pelvis in the standing position a rather characteristic crook or kink appears usually just above the ileocaecal level and at the lower border of the membranous attachment. At this level and distal to it there is definite thinning of the barium shadow due to narrowing of the bowel by torsion. Subsequent twenty four hour observations are important in demonstrating the delay in emptying.

THOMAS B A. Gonorrhœal Arthritis. *J Brit Med Assoc* 1927 1 174

The incidence of arthritis as a metastatic complication of gonorrhœa has never been high, averaging only from 2 to 3 per cent. Males are more frequently affected than females. In the vulvovaginitis of children and in gonorrhœa and ophthalmia neonatorum joint involvement is rare.

Not infrequently the joint condition is precipitated by trauma applied directly to the joint or in the form of ill advised or careless urethral instrumentation or treatment, excessive activity or sexual excitement during the acute stage of the urethritis. The arthritic symptoms in the acute stage of a gonococcal infection usually manifest themselves during the second or third week, but joint involvement may supervene at any time in the acute or chronic course of the disease or the complications it produces in the urethra or the uterine adnexa.

It must be conceded that the arthritic manifestations of gonorrhœa are the metastatic exponents of a blood borne infection. There are assuredly many instances in which the joint fluid is found to be

sterile—a toxic in co tradi t tion to a bacterial synov t s—a d in wh ch the ba teria localizing n the epiphyses of the bones cartilages or synovial membranes e ole ase ous effusion into th synovial sac of th joint by the nflammator y action th y produce. In the ases d pendig upon such factor as th vul e f the i fecti and the v tal resist c of th pati t bacterial invasion of the j nt occurs p actically at the onset f the n lve ment

In th auth pe ence gonorrhœal a thrit s has bee p lartic l n 58 p cent of the cases. In de e lingor l r of the f eqt v f th ir nv lv ment th j nt t t t t t d e th k ee ankle h p st sh lde phrl gal joints elbow metatars ph l gal joint pine m t carp phalange l joint s sa oil c tic l tion temporomaxillary articula ti n d stern cla ic l articulat on

Clin ically the ous pathologi typ s a e div l d nt ac te and h onic gro ps a t treat d a o d ngl

The sympt ms of gonorrhœal a thritis n its acute n l hr n forms don t l ffr m t rilly from those of arth t du to th r n t ion. Th gon ocus m v au a uppu t e s l mm tio and n the m l c m t t t c joint n l e m nt na s fr m m ed p yogen p t g nor hœal f i lurking in th s m l al cl pr st t gland

The lagn s of th g n c i r g t of syn t s a thrit ce ngi th c n d o th d k f ut g h e a d s ot ff any l f f lti th d t f gono l th g ito ur ry t a t r t p p l g b ngalm t on l u c and th p sen f g o n the a p ated fluid f th s j t l joint b e ng p thog mo c. Th t d n y to l rap l poly a t ular volvem nt of the large j nt al ha acte tic

Ac t g rh al a thrit must b l ffr entiat d from ac te heum t c f v. The latte i p on to be mor mg at ry th gono c i n f t ion and thre t t n l c all of th joint but th f st joint t be aff t d t n d to b c m f e fr m j m p tom a the last a nv l ed hr i gon orrhœal th it the sympt ms p s i s t i f st joint aff cted. I he m t c f e r the joint symp tom a mo a te th temperate s h g r nd sve t g and pr stati ar mor marked. H w e er ch lls and eats may occur als ng no rhœal arthritis f the i f l m m t n b om p l rent

The pro nosi g nor hœal a thrit s should a v b g u ded. It s d irectly dependent upon the promptn of th treatment and i bett r n the ut than i the h on c o f m of the d sease

The treatment of gonorrhœal thrit s emb ac not only th managem nt of th j nt but al the l c l urethral al l f o f infecti p l s the tem c invasion hich not nfr quently co ts

Abolute rest f the ffect d i o i t for a c k two i obligator y nd m y a e the pati t w eeks or years of disabilit. Cautio m st be ve cised ho v e not to immobilize the joint too long

Antigonococcus serum should be given intrave noul v or subcutaneously or ortho odoxyb nzo c ac l adm niste ed intravenously as soon as possibl the former being repeated in increasing doses e ery other da for three or four injections and the latter r peated t ce v eekly for thr e or four v e ks

The author s e perience with mercurochrome cal cium chloride and Pregl s iodine has not convinced h m of the reputed value of these chemicals. In t o case the u e of Pregl s iod ne was followed by an blite ative phlebitis

Wh n the pain is se e e 4 ccm of a 5 per ce t oluti n of sodium sal c ylate and from 15 to 30 g (to 2 gm) of sodium iodide will often g ve great r lief

In rare cas s of purulent f f sions a throt my may be necessary but as a rule aspirat ion and r i i c tion of the j nt (only if the fluid is pu lent) th th specific antiserum or from 5 to 20 ccm of a sol t ion of fo maldehyde and 2 per cent glycer n r peat l f necessary ill be suffi nt

In ll cases local gen to ur narv treatment con s ti g o f r i g nions prostatic mass ge a medica t ion of th sem nal ves cles p eferably by vaso pun t r o if there are abscesses drain ge of the m m l es le and the prostat by perineal opera t on should be done as oon as e ped ent

Hyp ræm a by Bier s method o induced by s p r h at d r o b y el t city o the sub ide ce of the a ute elling follo d by p sive a dact yem tio i v ry b nch l H EARL Co e M D

Fisher A L Some Con d erations of Second Typ A t l t s Ex mplifi d in the Should e J t J B J t s g 9 8 46

I her call atte tion to the fact that K fo d bel v e he has demon t ated amœbæ in the local zed a ea f the cond type of a th it (osteo arthrit s) th t n l out 60 per cent of ca e of arthrit s e n n l f f i a the st l sh n amœbic infestation and that i numerous cas the o al admini tratio of metrs has been foll v ed b y remission of th sympt ms. The obse vatio s suggest an etiologic l lti ship between entamœbæ and the second type f a thrit W P BLOW R M D

Lowman C LeR Continuou T t ion the T atr m nt of Spinal C nd tio s N tably S o lio is J B C J t s g 9 8 14

In the treatment of s o l o s s by c t inuou t a tion s d rib d by Lowma a very i genou method i employ d for the correct on of spu l r tati n. With tract n applied t the head a d pelvis n the u al man er the body i encr l d by d b nd of c n a u der tract o v h h pas ove l g spool on a g s ppe ext n l g f om the h ad to the foot of th bel l bes b ds are pla e l t they te d to l rotate th rotati o b thei pull. The purpose of the i o l s on the gas p p i to keep the l t eral pulls constant

In Lo m n s p mion c t inuou tract i ll accomplish as much in from fo r to eight ck

is accomplished by the plaster treatment in six months. The former method is of advantage also from the standpoints of rest and improved hygiene.

After the maximum degree of improvement has been obtained as shown by the X-ray a spinal fusion is done. If the deformity will not permit complete closure fusion is done only on the concave side of the curve the concavity being bridged by a tibial graft.

PAUL C. COLONNA, M.D.

Rollier A. Heliotherapy in Hip Joint Tuberculosis *Surg. Gynec. & Obst.* 1918, xli, 95

Rollier states that the cures of tuberculosis obtainable by heliotherapy are distinguished by three principal characteristics: a splendid general condition, development of the musculature and frequently the return of function in diseased joints.

He advocates insolation of the total surface of the integuments because he is of the opinion that the skin is not only an organ of protection but also a very important organ of defense and is able to subserve its physiological functions only when it is placed in direct contact with its natural milieu: air and sun. Not only does the skin play a leading role in the general metabolism but it secretes per day more than 1 liter of sweat containing sebaceous matter and various toxic substances; it is the most important source of immune bodies and it is probably also the most important endocrine organ.

The action of the sun is first of all general; being manifested in the skin, the musculature, the blood, the endocrine organs and the skeleton.

When exposed to the air and sun the skin becomes toned up and pigmented and regains its physiological function. When pigmented and physiologically adapted to heat and cold it resists the penetration of germs. The cicatrization of wounds is thus favored. The pigment serves as a protection against over-irritation by the ultraviolet rays and as a regulator of the heat from the sunlight. In addition, as Rollier's experience indicates, it acts as a kind of accumulator of dynamic forces; the patient's resistance being generally proportionate to his pigmentation. There is increasing evidence that the skin receives, furnishes and activates the elements essential for the metabolism of hormones and vitamins and that the majority of the avitaminic conditions are due simply to lack of sunlight.

The action of the sun on the musculature is very remarkable. By dilating the skin capillaries it causes a flow of blood from the depths toward the surface, thus acting as the most perfect massage. The building up of the muscles under the influence of the sun may be attributed doubtless to this more active circulation and also to the continuous reflex tonic action on the muscular fiber arising from the vibratory shock of the radiations on the mesh of sensitive nerve endings in the skin. By restoring the natural tone to the muscles and ligaments the sun cure re-establishes the normal balance of this lever mechanism and thus by an eminently physiological process brings about the return of articular function.

While the general action of heliotherapy can restore to the body undermined by tuberculosis a normal physiological function and a symmetric harmony, its local action is of equal importance in the treatment of tuberculosis of the bones particularly of the hip. However, a rigorous dosage and strict technique are prime essentials. Rollier has established certain principles of dosage which are applicable to all cases. The dosage must be so graduated that the reactions are never of harmful intensity.

When a patient with hip disease arrives at the Rollier clinic all plaster apparatus is immediately removed. After a few days of repose and acclimatization immobilization and extension are begun. In some cases extension must be applied immediately after the removal of the plaster to combat the pain and a tendency toward dislocation. The patient remains at first in his room with the windows open where he accustoms himself gradually to the altitude. Then if he shows no general reaction attributable to climatic conditions (e.g., a rapid pulse, a subfebrile temperature, nervous irritability, etc.) his bed is rolled out on a balcony to accustom him to the open air. After a period of time depending upon the observations of the doctor (general resistance of the patient, the state of his organs, the presence or absence of secondary infection, elevation of temperature, etc.) the sun cure proper is begun.

The first exposure to the sun is very brief. On the first day the feet are exposed three times for a period of five minutes each with a half-hour interval between the exposures. On the second day the feet are exposed for three periods of ten minutes each and the legs up to the knees are exposed for three periods of five minutes each. On the following day the feet are exposed three times for fifteen minutes, the legs up to the knees are exposed three times for ten minutes, and the legs up to the hips are exposed three times for five minutes. On the fourth day the abdomen is exposed to the sun and on the fifth day the thorax is exposed, a damp cloth protecting the precordial region. The upper regions of the body are exposed with great care. During this time the condition of the patient, his temperature and pulse and particularly the local reactions are carefully observed and at the least sign of intolerance the periods of insolation are shortened or suspended for a while.

To obtain a cure of hip disease with correction of the orthopedic deformity, rational orthopedics must be employed in addition to heliotherapy. Rollier has abandoned the use of the closed plaster apparatus. From the beginning of his work he has considered the wearing of such apparatus contrary to true physiology and orthopedics. He has therefore replaced the fixed plaster shell by orthopedic appliances of great simplicity which allow free access of the sun to the diseased regions, thereby aiding the local defense without hampering the general treatment.

For the orthopedic treatment of hip disease as for that of Pott's disease a correct arrangement of the bed is essential. The mattress should be flat and of hard mate-rial which will not form hollows under the pressure of the body. A soft mattress into which the body sinks prevents the normal evaporation of sweat, favors maceration of the skin and the formation of bed sores and may cause a faulty position.

In Rollier's clinic the beds are of metal with an under frame of steel plates. They are fitted with wheels so that they may be rolled onto the galler and are sufficiently high to facilitate the careful control of the position of the pelvis and the extension apparatus and at the same time permit free exposure to the sun. A mattress cushion is placed on the hard mattress to raise the pelvis. This raised position while teaching the patient facilitates perfect position of the coracoclavicular region, the scapula and in the prevention of flexion and adduction on deformities of the coracoclavicular region. The advantage is that when the patient is in the clinic, the continuous extension of the leg on the diseased side is an absolute rule of treatment. Its object is to hold the articular surfaces apart by axial traction in order to prevent friction and adhesion with contact contamination of the opposite surface. The separation of the articular surfaces also causes the enlargement of the joint space. In order to avoid distention of the knee joint the tension should pull from the thigh.

Because of his conviction that goiter and complete myxedema are an error prejudicial to the organism, Rollier seeks by means of a prolonged course of treatment and individualized work to develop the specific resistance of the patient along the hygienic rational stance.

As one of the physical and roentgenological conditions of the patient is moderate myxedema, the whole of the treatment of the patient is planned on the ventral position of the patient in the bath. A edge support cushion is placed under the thorax and another cushion is placed under the feet to prevent excessive traction on the toes. The ventral position does not include the maintenance of extension and has the great advantage of allowing exposure of the entire body and particularly of the thigh region, thus helping the development of the muscularature. Often a true muscular regeneration is the result. The quadriceps which so often degenerates to mere trip and the gluteal mass which is completely flattened and inelastic and is the effect of prolonged inactivity and approach to the normal.

As the circulation becomes more active and intense under the action of the sun and as the integument begins again to participate in the cycle of local metabolism, the muscles receive the tone and elasticity and continue to return to their functional function. The tension of the circulation is also spontaneous. Rollier allows active passive movements of the joint.

The beginning of movements are seen during treatment and develop *passu* with the progress

of cure but the patient is allowed to try occasional flexion movements only after the X-ray has demonstrated cicatrization of the bone. These movements improve the circulation and strengthen the muscles and the regular repetition helps to restore the mobility of the joint insofar as the anatomical conditions permit.

The treatment of hip disease by heliotherapy is most successful when the lesion is a closed one. In the presence of a cold abscess, Rollier is in no hurry to aspirate. He waits as long as possible before as long as the abscess does not threaten to open spontaneously. Aspiration is done only when the skin is thinned by the abscess. Rollier attaches importance to cold abscesses because on account of their content of immune bodies they contribute a valuable immunizing factor to the defense of the organism. Aspiration should be carried out at a distance and repeated if necessary to prevent spontaneous opening. The complication of metastatic infection completely reverses the favorable prognosis of locked hip disease. Rollier therefore insists on conservative treatment of this localization in order that the closed tuberculous lesion may not be transformed into an open one.

In fistulous hip disease good drainage is essential. If the track is well drained the sinuses will dry up and the general condition improves.

In describing the processes of bone repair, Rollier states that he commonly sees tuberculous cases in full activity with the acetabulum the femoral head and even the neck of the femur showing the signs of extensive melting represented in the film by the well known foamy oblique shadows of the contours of the joint. In this chaos a new head gradually appears the outlines of which at first confused and cloudy become gradually more precise and regular. The demarcation zone then becomes clearer and the decalcified region becomes the sites of intense recalcification.

In case in which the femoral head has burst through the seat of the floor of the acetabulum the X-ray films demonstrate reconstruction by stages. A strong protrusion of rough structure is first laid down. This becomes compact and regular and there is formed a firm and delineated new articular cavity which allows a functional adaptation of the new femoral head.

When once the bony cicatrization is complete clinically and roentgenologically the period of tensioning for the vertical position and for exercise begins. Prudent graduation with the usual precautions is essential. In Rollier's cases at this stage, last cicatrizations are placed on the legs to prevent abrupt dilatation of the venous network and orthopedic insoles are placed in the shoes to support the plantar arch and prevent flattening. When the patient begins to walk he is aided by the use of long sticks held at shoulder level so as to expand the chest. Cutches are not employed as they have a tendency to deform the spine.

H. EARL CONWELL, M.D.

Wakeley C P G Fibrocystic Disease of the Femora *Proc Roy Soc Med Lond* 1927 vii 67

Wakeley reports a case of fibrocystic disease of the femora in a physician thirty two years of age. The patient stated that at the age of ten years he sustained a fracture of the right femur at the juncture of the upper and middle thirds as the result of a slight trauma. Good union resulted in six weeks. Immediately thereafter he suffered a green stick fracture of the left femur at the juncture of the upper and middle thirds as the result of throwing the weight of his body on the leg. Good union resulted in eight weeks but was associated with angular deformity. At the age of twelve years the patient fractured the left femur in the same region. Good union resulted in eight weeks. At the age of fourteen years he sustained a third fracture in the same region of the left femur. Good union resulted in ten weeks but with marked deformity.

When the patient was seventeen years old the deformity of the left leg was increased and there was marked coxa vara of the right hip. The roentgenogram revealed in the left femur a cyst the size of a hen's egg. An osteotomy was performed and the wall of the cyst scraped. The fluid in the cyst was of a dark color. No growth was obtained on culture.

The following year an osteotomy was performed on the right femur to correct the coxa vara and the deformity of the left femur was also corrected. The bone was found to very soft.

When the patient was twenty five years of age he sustained another fracture in the same region of the left femur as the result of an accident. At the end of five months union was poor and the use of a weight bearing caliper was necessary.

When the patient was twenty nine years of age an osteotomy of the right femur was performed to correct the coxa vara which had recurred. Following this operation a streptococcal osteomyelitis developed but cleared up in three months.

At the present time there is a well marked fibrocystic disease of the upper ends of the femora and the patient is obliged to wear a walking caliper splint on each leg and to use crutches. Following the last osteotomy a culture made from streptococci recovered from the wound was injected. Thereafter some of the cysts appeared to clear up and consolidate. Whether this was due to the vaccine or the protein shock the author is unable to say but he believes it tends to confirm the theory that fibrocystic disease is of inflammatory nature rather than a new bone tumor formation.

NORMAN C BULLOCK M D

Moore C U Rickets of the Lower Extremities Its Relation to Genu Valgum and Static Flat Foot *J B & J Surg* 9 8 x 96

Skeletal signs of rickets are most evident at times of rapid growth of the bones that is during the first two years of life and at puberty. These signs are craniotabes in the first six months the rosary

and Harrison's groove in the first year genu valgum or varum in the second year and static flat foot at puberty.

In normal legs the epiphyseal lines of the femur and tibia at the knee are parallel and the knees and inner malleoli touch when the child stands with the feet parallel. When the knee is rachitic the roentgenogram shows cupping or feathering of the epiphysis thinning of the cortex transverse lines of deposited calcium in the diaphysis and an epiphyseal line which is not at a right angle to the shaft. When the epiphyseal line is not at a right angle to the shaft the knee goes inward or outward when weight is borne on the leg depending upon the direction of the slope of the line. In such cases there is also abnormal lateral mobility. This is often the first sign of a rachitic leg.

For the measurement of lateral mobility the author uses an arthrometer which holds the thigh and permits movement of the leg below the knee. When the knee is normal the lateral movement as measured at the heel does not exceed 3 cm. By means of records made with the arthrometer the course of the deformity can be definitely shown without X ray examination or other expensive procedures. In the case of the ankle such measurements are more difficult and records must be made with roentgenograms.

In cases of flat foot footprints do not always give a reliable idea of the functional condition. A simple test consists in having the child stand on the balls of the feet. If the scaphoid bone is not visible or palpable in this position but becomes prominent when the child comes down on the entire sole functional flat foot is present.

It is commonly thought that children outgrow rachitic deformities but examination of young adults shows that this is not true. Of the first million men examined for service in the Great War the rachitic deformity of flat foot was found in 177 per 1000 an incidence practically as high as that of all other diseases and deformities combined.

There seems to be a hereditary factor in rachitis extending back sometimes three generations. In the experimental production of rachitis it usually takes three generations to produce the disease by diet. In the cases of children who show rachitic signs in spite of careful diet the parents were probably rachitic.

Every effort should be made not only to maintain the child on an antirachitic diet but also to provide heliotherapy and light clothing. More danger is associated with being over clothed than with being under clothed.

WILLIAM A. CLARK M D

Henderson M S and Fortin H J Tuberculosis of the Knee Joint in the Adult *J B & J Surg* 1927 1 00

Typhoid and eleven cases of tuberculosis of the knee joint treated surgically are reviewed. The patient age at the onset of the condition and at operation and the relation of the lesion to tubercu-

los s n other parts f the bolv and to assoc ated t aumr are d cussed

Tub culosi f the knee j nt s character zed by chronicity nd emi thout c mplete free lom fom s mptom The lita to be obta l from roe tge og ms v rv th the t g of the c lition there appare th no typical pctu e In m t f the a e r u d both the synovia anl bone er ol el l h a small pe e t ge v as the syno a l l alone

Th pe rti e techn q i le cr bel in letala l illu trat l b e cral lra g A tran e e skin i i e p o g the kne j t m de a l ll f th v i e c el l h m u t f b e m vel fom the t l l f mur l e p n the gle f l cti n The l su f e ar h l togeth by t re l a l l l l bo e m l fr m the con l v fth femur u l a agr ft font d t the l f the joint

O mpl t fth p c ati c t ten l g from th t to th g ppld Th l g then up n l f th e k l t the n l of th t t me the nul r m d i

I m t f the c i l h m un n a obtun l N m n ccu el n p c r t Ampu t t n a n in s p cent Dr g nu and p n th knee e r e anl the g ne l c i t n ho l mark l imp ement Of the p t e t r q e t c l

Kr k H El c T eatm nt of Cl b Fo t
(H l t h Kl m p f l h ll i D t t Z l f
f C l q 49

Th e c llent re ult bt in d l M m m n in se re c t ctur b th p l gel ap p l c of slight f c g e t e d t th uth the u e of th ame pr c j l the t me t f l b foot El t c g r l u l re l u c t f a p e r i o r t f c i b l e t a r g fth ligam t c m p n fth b nes se erance of the s ft pa t l m l a p o c l u Whereas ela ti ban lag er f m l v u e l n l y t m n t r n r l u c t i o n K r a k m p l v th m t b t e d c t H e r d a l l p t f o e r c o r r c t n The a m o f t e a t m e n t s h u l l b g t l a l a p t a t n o f th t i s u o t t e a r i n g

K r a k e t e a t s c l u b f o t n f a n t s the same a y a u t e a t e d o r r e c e t c l u f t n l l e c h i l d r n I o the c a o f d u l t n t h i g e n b e e p e c t e d f o m the e l a s t m t h l

Th t e t m e n t b g n i t h c r r c t i e m o e m e n t e s e c u t e d i t h b o t h h a d t h o u t a p p a r a t u r The m o e m e n t s m d e f h t e n m n u t s t v o o t h r e e t m e l The p o t n t h e r e v o b t a i n e d f i l t h a d h e i e p l t a n d l t b n l g e s P l d g u e d t o p e t c o m p

r k l e s In the c e s of e r k c h i l l n p l a s t m y b e p p h e f t h f u l a l o m e s e s n o b l a g e u e l the t r e t m t s i t g t e l v of m a n u a l r e l i o n T h i t h e t e a t m e n t f f i n f a n t s

In the c o f c h i l r o n e o r t o y e a r s f a g e c o n s t n t e l a t t a c t a p p l d a s s o p o s s i b l e F o m a p l a t c a s t o f the f o o t a s m l l

shoe is made by the celluloid acetone method This shoe fits perfectly and is padde l with soft felt It lea s the toes free and is open at the outer borde A n l o w i cut for the e t e r n a l m a l l e o l u s a d c l o e l i t h l a c e s By means of this shoe it is p o s s i b l e t o o b t a i n a b e t t e h o l d o n s m a l l f e e t i n c l u d i n g the c l e u m E l a s t c t r a c t i o n i s a p p l e d to the shoe with the v d f h o o k s o r e y e l e t s

In the cases of small children the pull is best of a e l f r m the s i e s of a p l a s t e r b e d In the cases f c h i l r e n w h o a r e a b l e to w a l k o r to s t a d u p a b t m d e b y the m e t h o d d e s c r i b e d the f o t p o r t o n b e i n g a t t a c h e d to the l e g p o r t i o n b y a h i n g e O n the u t e r s i d e of t h i s b o o t t h e r e a r e e y e l e t s w h c h p r g e a t t a c h d W h e n the s p r g a c t i o n i t o o l i g h t b e c a u e o f l i m i t e d s p a c e a s c r e w i s u s e d c e c t i n g o f the l e f m i t y b e i n g o b t a i n e d b y g r a d u a l l y t u n g the c r e v

The increased t m e a d e p e n s e of this m e t h o d a e m e t h n j s t i f i e d b y the g o o d f u n c t i o n a l r e s u l t L v e h e c h i l l s p a r e n t s a r e i f o m e d a t the b e g i n n i n g t h a t the t r e a t m e n t v i l l t a k e f o m o n e t t h e e v a s t h e y g l a d l y b i n g the c h l d b a c k b e c a s t h v k o t h t c o m p l e t e c u r e i s p o s s i b l e w i t h o u t o p e r a t i o n T h m e t h o d i n o t a c u e a l l s i n c i m i l d c a e s p r a c t i c a l l y a n y m e t h o d i s g o o d a n d i n s e e c e h d i l y a n y p r o c e d u r e i s s t i s f a c t o v b u t a s c m p a e d i t h f o c i b l e p r o c e d u r e the s u p e r i o r i t y of the c o n s e r v a t i v e t r e a t m e n t w t h s l i g h t c o n t i n u o u s e l a s t i c t r a c t i o n c a n n o t b e t o o g e t i v e m p h a s i z e d Z i p r (Z)

SURGERY OF THE BONES JOINTS MUSCLES TENDONS ETC

M a s t n d G n A t h d e s i s o f t h W r t
(L t h l d n p g t) B l l t e m S d
i g d f q 7 u 489

M s r t h a s f o n d t h a t the r e s u l t s of t e n d o n t r a n p l a n t t a t h v r i s t i n c a s e o f l a t y of the j u n t a r e u a l l y p r A l t h o u g h the i m m e d a t e r s u l t a c c v l l t h i m p r o v e m e n t i o l o g m i n t a n l a t h d i s i s m o r e a p t t b e s u c c e s s f u l M a s s a t d s u s e o n l y the p a a l y t c r i s t d e t o r a l i a l p a r a l s

H s t a t i t t h e r a r e t w o p i n o s a s t o the p o s t o n of f u n c t o f the r i s t S o m e c l a m w t h B r o a t h a t x t e n i o n t o 45 l e g r i s the m o t a d a n t a g o u s p o t i o O t h r s p e f e t o m m o b i l e t h h a n l s t a g h t f r m the f o r e a r m b e l v i n g t h a t t h s p o s t o n b s t f o t h l u m b a c a n d i n t e r o s e u s m u c l e s M a s s t p r e f e r s t o i m m o b i l e t h t t b u t o d e g r e e o f c t e n s n

The p e a t i o n i s p e r f o r m e d t h r o g h a h o r s e s h o e h p d n i o n o n the d o r s u m the b s e f h i c h t r a n s r a n d d t a l e r t h p o m a l n d s of t h m t a c a r p a l A l g t u d n a l c i s the m a d f o m t h e n l o f t h t s e i n c s p m a l l a l o g t h b o l e s of the r a l u s a n d u l n t o a b v the t l d p s s e s B e c u e of the n e c t v o p t t i g t h f l e x o t e n d o s a v l a r a p p o a c h n o t f a d The e t e n s o r t e d o n s m a y b e a s l

retracted because of their laxity they should not be cut. The ligaments and periosteum at the dorsum are divided and dissected from the bones over the radio carpal joint with care not to destroy them.

The ectoming of the bones is done with care. A chisel rather than a saw is used for this purpose. The radius is first sectioned at about the place of its previous epiphyseal cartilage. The ulna is sectioned after the removal of the triangular cartilage. In order to prevent ulnar deviation of the wrist the section through the ulna is made to pass from above and laterally downward and medially. The navicular, lunate and triquetrum are then chiseled and some of the head of the capitate is removed with the navicular and lunate.

The bone ends thus bared are placed in apposition and the periosteum and ligaments which were carefully saved at the beginning of the operation are sutured over the posterior surface. These sutures are very important in maintaining the bones in apposition but to perfect the arthrodesis the extensor tendons are shortened by the method described by Maclaurin being drawn downward until the fingers are in extension and held while shortening sutures are introduced.

The skin is then sutured carefully and the hand immobilized with an angle of 20 degrees of extension at the wrist. The cast applied extends from the middle of the forearm down over the palm and fingers. The tips of the fingers are left exposed. This cast is left on for fifty days without change of dressings or other attention.

One case treated by Massart in this way is reported.

GASNE, who read Massart's paper, stated that in cases in which because of the patient's occupation it is necessary to maintain some degree of mobility at the wrist the use of an apparatus gives better results than arthrodesis but when the patient is engaged in heavy manual labor arthrodesis is the better procedure.

LETRAIRE called attention to the fact that club hand and other deformities are often treated very successfully by musculotendinous transplants.

MICHAEL L. MASON, M.D.

Gaenslen F. J. Sacro Iliac Arthrodesis Indications, Author's Technique and End Results J. Am. Med. Ass. 19, 1900, 33

In an earlier article Gaenslen reported four cases of sacro iliac fusion by a new method. In this article he reviews five others. He states that in both tuberculosis and persistent strain fixation by appliance would be indicated if it could be done efficiently but there is no form of brace or support that will take the place of surgical fixation. In tuberculosis of the sacro iliac joint in adults fixation is justified and indicated as soon as the diagnosis is made. In the treatment of sacro iliac relaxation and strain arthrodesis should be reserved for cases in which the condition is so painful or disabling as to render radical measures imperative.

Gaenslen describes the operative procedure reports end results obtained thereby and calls attention to a diagnostic maneuver which has proved most valuable in the differentiation between sacro iliac and lumbosacral lesions and lesions of the right and left side.

The diagnostic maneuver consists in hyperextension of the hip with fixation of the pelvis and lumbar spine. The patient lying supine flexes the knee and hip of the same side acutely crowding the thigh against the abdomen by clasping his hands about the flexed knee. This brings the lumbar spine firmly in contact with the table and fixes both the pelvis and the lumbar spine. The patient is then brought well to the side of the table and the opposite thigh is slowly hyperextended by the examiner with gradually increasing force by pressure of the hand on the top of the knee. With the opposite hand the examiner assists the patient in fixing the lumbar spine and pelvis by pressure over the patient's clasped hands. The hyperextension of the hip exerts a rotating force on the corresponding half of the pelvis in the sagittal plane through the transverse axis of the sacro iliac joint. The pull is made on the ilium through the Y ligament and the muscles attached to the anterior superior and anterior inferior spines. As a result of the impairment of ligamentous support on the diseased side this rotating force causes abnormal mobility accompanied by pain either local or referred on the side of the lesion.

In describing the technique for arthrodesis Gaenslen states that the patient should lie in the semiprone position. In the cases of stout and short-aided persons it is well to have the table raised in the center with the peak in the flank as in kidney operations. This brings out the crest prominently. If the table is not so raised and the patient has large hips the semiprone position produces a postural lumbar scoliosis and a crowding of the iliac crest against the costal margin so that palpation even of the iliac crest may be difficult. Before preparation of the skin it is well to mark the location of the posterior superior and posterior inferior spines for proper placement of the skin incision. Especially in the cases of stout subjects this procedure is distinctly superior to the location of landmarks by palpation of the sterilized and draped field. The posterior inferior spine usually is not palpable through the soft parts. It lies about 1 1/2 inches below the posterior superior spine on a line connecting the latter point with the trochanter.

The first incision is made along the posterior two thirds of the iliac crest curving around behind the posterior superior spine and ending over the posterior inferior spine of the ilium. This rather large incision which extends through skin and subcutaneous fat to the deep fascia is necessary to allow in a later step a proper reflection of the flap of bone and soft parts for the intra articular work. The wound margins should be freed and retracted so as to expose the crest to the posterior superior spine.

An incision is then made over the posterior third of the crest and over the posterior superior spine a

In the early years of the War the treatment of compound fractures was attended by a high mortality because of lack of organization and equipment in the hospital. This led to segregation of fractures and popularization of the Thomas splint.

Bristow believes that every student should be thoroughly trained in the use of the Thomas splint especially as an emergency splint.

BLAKE summarizes the advantages of traction and suspension as follows:

1. No reduction is necessary.
2. No anesthesia is needed.
3. The limb is open for physiotherapy repair being thereby hastened.
4. Movement in neighboring articulations is permitted.
5. Traction has an efficient mobilization effect because of the confining action of the stretched muscles.

Reduction should be obtained as soon as possible. Common mistakes in the treatment of fractures are the use of insufficient traction and delay of reduction for several days.

Blake has been able to reduce nearly all diaphyseal fractures of the femur and humerus by traction and suspension. In the few cases in which reduction by traction was prevented by the interposition of muscle, open reduction was done.

SPEED states that the diagnosis of fracture of the femur should be made at the site of the accident and the treatment should be begun immediately. By early fixation shock and tissue trauma are greatly reduced. Speed outlines recognized operative and non operative methods of treating fractures of the femur.

R. L. SOTO HALL, M.D.

Moore B. H. The Mechanical Action of the Periosteum in Fresh Fractures. *J. Bone & Joint Surg.* 928 x 8.

The periosteum of young bones has three layers—an outer layer of interlacing fibrous bundles, a middle or fibro elastic layer, and an inner layer of fine connective tissue bundles—between which there are blood vessels and osteoclastic cells. In the periosteum of adult bone the middle and inner layers are fused into one layer containing elastic tissue.

The author's studies of the action of the periosteum in fractures were made on the leg bones of calves less than an hour after their removal from the living animal. The skin and tendons were removed but the periosteum was left intact. The bones were fractured by impact.

When the bone was fractured transversely the periosteum on the side opposite the breaking force was always torn. The tear was transverse to the long axis of the bone and only slightly separated from the bone. Occasionally a longitudinal tear occurred from the ends of the transverse tear.

Reduction of an overriding deformity by hand with direct traction in the line of the long axis of the bone was very difficult. In fact the greater the

traction the tighter the ends became locked together in the deformed position. If the edges of the fracture on the side next to the intact periosteum were placed together by bending the bone with the fragments at an angle the fracture could be reduced by simply straightening the bone. The periosteum then held the fragments like an elastic splint.

Oblique fractures caused no tear or only a small longitudinal slit in the periosteum at either end of the fracture. The periosteum could be stripped from the bone along the line of the fracture. Because of the splint like action of the periosteum very little deformity occurred in this type of fracture. Shortening of the bone of from $\frac{1}{4}$ to $\frac{1}{2}$ in was constant and a pull of from 30 to 40 lb applied directly to the bone was necessary to restore the original length.

In determining the elasticity of the periosteum experiments were made on a strip 6 in long and $\frac{1}{4}$ in wide. It was found that a pull of 6 lb produced $\frac{1}{4}$ in of lengthening and a pull of 15 lb produced $\frac{1}{2}$ in of lengthening. In the treatment of fractures the pull is probably applied to a much shorter strip of periosteum and the limit of elasticity is reached much more quickly.

The author concludes that in transverse fractures the elastic pull of the periosteum is an additional factor producing angular and overriding deformity. The periosteum tends to lock overriding fragments by its mechanical action under direct traction and to cause angular deformity by its elastic action if the reduction is not anatomically perfect. When an anatomically perfect reduction is obtained the elastic action of the periosteum tends to maintain it. Therefore in the treatment of fractures it is advisable to use manipulations which will take advantage of these properties of the periosteum.

NORMAN C. BULLOCK, M.D.

Dahl Iversen E. The Frequency and Duration of Osteitic Processes After Osteosynthesis (274 Cases) and a Follow Up Study of 66 Cases of Fracture Treated by Operation (Ueber die Häufigkeit und Dauer der Osteitischen Prozesse nach Osteosynthese (24 Fälle) mit Nachuntersuchung von 66 Fällen operativ behandelten Knochenbrüchen). *Hosp Tid* 1971 449 49.

The author gives a detailed statistical report on 274 cases of osteosynthesis performed by different methods. Osteitic processes were present in from 15 to 28 per cent of the uncomplicated fractures and 50 per cent of those with complications. Pseudarthroses were present in from 3 to 4 per cent of the cases. The osteitic process became cured in the first four months after the removal of the foreign body in 53 per cent of the cases, within a year in 80 per cent and in from one to three years in 20 per cent.

In the author's opinion the most favorable time for osteosynthesis is the first week after the occurrence of the fracture. Prostheses which have remained in place for six months without causing complications may be permitted to remain since the occurrence of complications is not to be feared after

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The author gives a detailed statistical report on 274 cases of osteosynthesis performed by different methods. Osteitic processes were present in from 15 to 28 per cent of the uncomplicated fractures and 50 per cent of those with complications. Pseudarthroses were present in from 3 to 4 per cent of the cases. The osteitic process became cured in the first four months after the removal of the foreign body in 53 per cent of the cases, within a year in 80 per cent and in from one to three years in 20 per cent.

In the author's opinion the most favorable time for osteosynthesis is the first week after the occurrence of the fracture. Prostheses which have remained in place for six months without causing complications may be permitted to remain since the occurrence of complications is not to be feared after

the literature the author adds a case of such a fracture in a man twenty nine years of age. These fractures occur most commonly in adolescents either because young persons are more addicted to gymnastic exercises than adults or because fusion of the lesser trochanter with the femur does not take place until about the eighteenth year of age. In old persons such fractures may occur as the result of osteoporosis from involution.

In a few cases the fracture is caused by direct trauma but in the majority it is due to (1) more or less violent contraction of the iliopsoas muscle not accompanied by relaxation of the contracted antagonistic muscles or the reverse (2) lack of coordination of movements (3) a rapid defense contraction which does not give the nerve centers time to bring about relaxation of the antagonistic muscles or (4) as in the author's case fatigue of such degree as to bring about a state of contracture of the antagonistic muscles so that the force of the two antagonist becomes greater than the resistance of the lesser trochanter.

Generally only one fragment is broken off but in some cases the fracture is of the comminuted type the displacement of the fragments following the line of action of the iliopsoas muscle upward and a little forward and inward.

The symptoms vary in intensity but as a rule are sufficiently characteristic for a clinical diagnosis to be made with considerable certainty. However the findings of the physical examination should be confirmed by roentgen examination. The chief signs of the fracture are a lack of deformity with shortening of the limb and pain on pressure in the region of the iliopsoas muscle. Ludloff's sign Schuelein's pain on extension of the limb and a swelling which is movable on extension.

In the treatment the fragments should be replaced following the line of action of the iliopsoas by placing the limb in flexion external rotation and slight abduction massage and exercise are indicated to facilitate the absorption of extravasations and favor callus.

AUDREA G MORGAN M D

Loefberg O The Treatment of Fractures of the Neck of the Femur 389 Cases on the Surgical Service of the Municipal Hospital of Malmö (Behandling der Fractura collis femoris 389 Fäelle in der chirurgische Abteilung des städtischen Krankenhauses in Malmö) *Zentralblatt für Chirurgie* 1927 li 2 2

In the author's cases of fracture of the neck of the femur reduction is attempted as soon as possible. In the majority of cases reduction and fixation in a plaster cast can be done following the injection of 1/2 cgm of morphine. Reduction is always effected manually. It is nearly always possible to drive the fragments into one another by a blow of the fist on the great trochanter while the other side of the pelvis is supported. A plaster cast is applied after padding with cotton. The foot is left free. The period of fixation is usually eight weeks for medial fractures

and sometimes a little less for fractures of the lateral type. A case which came to autopsy showed that wedging of the fragments requires not only reduction but manual wedging.

Of the fractures reviewed 67.5 per cent were medial fractures and the rest lateral fractures. Bony union occurred in all of the lateral fractures but in only 67.5 per cent of the medial fractures. Medial fractures should be reduced and fixed with the leg in inward rotation and abduction. Of the lateral fractures those due to torsion should be reduced with the leg in inward rotation and abduction. Splinter fractures should be reduced with the leg in abduction and a middle position and fractures at the angle should be reduced with the leg in maximal abduction.

After the removal of the plaster cast the patient should remain in bed until he is able to raise his leg with the knee extended. Passive movements are contraindicated; only active movements should be permitted. Pseudarthroses in young patients in good general condition should be operated upon if they cause pain and functional disturbance.

VALENTIN (Z)

Albee F H Late End Results in Ununited Fracture of the Neck of the Femur Treated by the Bone Peg or the Reconstruction Operation *J Bone & Joint Surg* 9 8 124

Albee reviews the end results obtained in thirty six cases of ununited fracture of the neck of the femur in which an autogenous bone peg was used and forty four cases in which his arthroplastic reconstruction operation was performed. He believes that if weight bearing upon an ununited fracture could always be prevented bone pegging could be successfully applied more frequently.

In the cases reviewed the result was considered excellent when there was nearly normal mobility with normal stability; the use of a crutch or cane was unnecessary and the patient was able to carry on strenuous activities and walk several miles without pain or fatigue.

The result was considered good when mobility was nearly normal; stability was normal; the use of a crane or crutch was unnecessary; and the patient was able to carry on his usual activities without pain or fatigue.

The result was regarded as fair when the patient was obliged to use a cane and experienced slight pain or fatigue.

It was regarded as poor when the use of a crutch was necessary and activity was associated with considerable pain and fatigue.

An excellent result was obtained in 90 per cent of the cases treated by bone pegging and in 75 per cent of those in which the reconstruction operation was done.

Most of the patients were under fifty years of age. The length of time that had elapsed since the operation ranged from a few months to fifteen years.

The article deals with postoperative roentgenograms of five cases treated with the autogenous bone peg and two cases treated with the reconstruction operation.
P. C. C. LONN, MD

Lehman E. P. and Eskels J. H. Fracture of the Talus. A Study with Notes on the Mechanism of Injury. *J. B. & J. S. G. 9, 8, 8*

Lehman and Eskels report a case of fracture of the talus scaphoid from direct violence and discuss the mechanism producing this type of fracture. They believe that such fracture is not probable without a ligamentous tear. A possible mechanism is (1) forced flexion of the foot with a violent impact of the distal capitate of the metatarsal (2) transmission of the force through the foot striking the scaphoid against the upward sharp perpendicular angle of the medial cuneiform.

P. C. C. LONN, MD

Wilson P. D. The Treatment of Fractures of the Os Calcis by Arthrodesis of the Subtalar Joint. A Report on Twenty Six Cases. *J. A. M. A. 9, 12, 176*

Fractures of the os calcis constitute a percentage of all fractures and cause disability in from 30 to 80 percent of the cases. They are most common in males. In recent cases reported by Cahill the average age of the patients is forty years. The injury is most often the result of a fall on the feet, such as sustained in a fall on the heels. The treatment is by plaster of Paris cast with the foot in a plantar flexion position. The treatment of the calcaneal fracture is by plaster of Paris cast with the foot in a plantar flexion position.

The most common types of fractures of the os calcis are the fissured and the comminuted. As a rule the fracture lines—one passing through the constricted portion just behind the articular facet dorsally and forward and the other beginning on the outer side in front of the anterior margin of the posterior articular facet running downward and forward through the insertion of the articular surface and emerging on the medial side posterior to the base of the sustentaculum.

The twenty six cases reported by the author were treated by arthrodesis of the subtalar joint and proved that has been employed with good results by Hoke, Irace, Hobbs, Conn, Allis, and Reid. In addition to the arthrodesis the treatment included supplementary measures such as elevation, lengthening, excision of callus, and removal of loose fragments or excision of bone. The injury to the calcaneal facet joint is an important factor; the production of the pain and disability. At operation the author has invariably found gross pathological changes. Recent fracture showed comminution of the articular cartilage with destruction of fragments and an organized blood clot in the joint. All of the fractures showed pannus formation.

The patients were operated through a lateral incision. The excision of the talar articular facets between the sole and the astragalus is removed. In recent fracture Wilson attempts to correct the deformity by an old-fashioned scooping out the lateral facet of the calcis and elevating beneath the talar malleolus.
A. F. S. MD

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NOTE—THE BOLD FACE FIGURES IN BRACKETS AT THE RIGHT OF A REFERENCE INDICATE THE PAGE OF THIS ISSUE ON WHICH AN ABSTRACT OF THE ARTICLE REFERRED TO MAY BE FOUND

SURGERY OF THE HEAD AND NECK

Head

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C j t p l a t y n t a l f l e c t J
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R t l a p t f t h m A C P R y
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Th p p l e t f h t b d t h m y n d j c l t
O G M o r n d f H D H o r r P c R y S M d
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Th t m t f c e f y l t f l l w l
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I d t P v M d I b r a 9 7 439
Th r y t l l l y t m J O M c R v o l d s J A m
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N p t t m t t r a t t h p t
l t g t m t Z H E A h O p h t h 9 8
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R t t t h m d t L W J E A m J
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R v S M d L o d 9 8 4
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H e m h g p t n t l t t f d t l a
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Th t l y d g d p f p t
J A P r B t M J 9 7 803 [359]
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 Nod l got w th hype th y d sm H M T T O S
 J A h Sug 98 7
 Meta ta g p a h y m t o d l g t r r e l t u
 t t f j y E BRINK IAN K l n W h s h 97
 93
 Th d ad m t L DAUTREB D nd A L E O T
 B e ll m e d 97 534
 Mult pl d m f th th y o d w th glyc u r p t
 f c A W BR AN Am J S g 198 7
 G o p h t l m g t J L DE COURCY B sto M &
 S J 98 c 35
 U l a t l p h t l m s l G a d e s J DEJ
 P E M B E R T J N d W W S G E S g C l N Am 97
 149
 H t b l k n l c d b v n p t o i a c a of
 C d G B v d S R P HARTLEY P c
 Rov So M d Lo d 98 13
 A add th t e m t f e p h t l m g t r
 A J W A O N Brit M J 98 83
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 E p h t l m g t e path l l ch n g e a s a r ult f
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 l t f th l f e r th y d t B e d w s
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 183
 Op at n f t t h c g t H MATT S h w
 med W h h 97 l 185
 Op at u t e m t f t t h r g i t F S A R
 RUC d W F v S h med W h n h 97
 189
 Th t m n t f th y d e r B E R A L y o h
 97 58
 M h g t t m r f th th y d g l a d t t e d by p
 at n d m d th e t y s H H BOWI c
 Am J R n t e l 927 5 [364]
 S m s g l l y m p t a t t o f th th y r j
 art nes C H VSCHEV Schw med W h s chr 97
 184
 A e th n th y d g r y T P D U N I L L P r c
 R y Soc M d Lond 98 345
 K o h p r a t f o g t A K O C H R A Schw l z
 m d Wchn h 97 l 8
 Th co d i f th t h f l l w g i t p r a t
 1 P E S D u t h Z t h f Ch 9 46
 Th h y d n o t t s p m f m
 g t p r a t A T l n d B J s t o v M t t
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M i c l l a n u

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SURGERY OF THE CHEST

Che t Wall and Bre st

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T a h a Lungs nd Pleura

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Heart and Pericardium

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Esophagus and Mediastinum

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SURGERY OF THE ABDOMEN

Abdominal Wall and Peritoneum

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 l M K S w A S g 9 8 l 44
 A th d a f at d g l
 h m S K E Z Y Z t l b l f Ch r 9 l 77
 Th d am p c pl th p t f g l
 h n G G J R E Z t l b l f Ch 9 l 5
 Th techn q f th r d l p t f r g l
 h M M G s Z t l b l f Ch 9 7 l
 44

R p f th t n l b l q e g l h
 I G C v l S g Gyn & Ol t 9 8 l 3
 F g b dy th p t l c ty G L A s s 9
 M J J 9 8 l 39
 Th l l f p e t l d t g p g L J
 W J P th & B c t n l 9 8
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 J M d C n n t 9 8 533

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- Infections of the hand L H MCKIM Canadian M Ass J 928 xvi 1
- Congenital familial atrophy of the nail A L WALTER and W L BRADFORD J Missouri State M Ass 1928 x 10
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- Giant cell tumor of the cervical spine M CHURCHILL Chir d o lan di movement 92 vi 58
- Postural defects and coliosis F SCHEDE Klin Wchnschr 9 1 186 908
- The treatment and treatment of scoliosis FARKAS Ztschr f orthop Chir 927 xli 3 160
- The etiology and treatment of scoliosis DREHMANN Zentralbl f Chi 9 li 2 4
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- The correction of the patient for the application of a plaster cast for scoliosis M LANGE Ztschr f orthop Chir 927 liii 366
- Compression of the vertebral bodies by tetanus G PUSCH Ztschr f orthop Chir 19 7 liii 446
- Compensatory scoliosis A SCHWAB Ztschr f tschech sl orthop Gesell h 9 7 i 544
- The symptom of muscular delineation in tuberculous podylitis P G KORNBERG Zentralbl f Chir 19 li 20 3
- Confusion between tuberculous podylitis and Kuemmel's disease in damage to the spine I HEILIGTAT Natschr f Unfallhilk u Versicherungsmed 19 xxv 162 0
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- Helicobacter pylori in the joint of the cervical spine A ROLLIER Sug Gynec & Obst 19 8 li 95 [413]
- Some types of coxarthrosis S A BROFELDT Duod cim 19 li 423
- Fracture of the neck of the femur O F SCHULZ Ztschr d tschechoslovak orthop Gsellch 192 ii 633
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Fractures about the elbow joint P H KREUSCHER Illinois M J 1928 lvi 41

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Orthopedics in General

Thirty four reports of progress in orthopedic surgery P D WILSON and T BRUNN M N SMITH PETERSEN P CHIRILEN and the Arch Sug 9 8 113

A hospital for an orthopedic hospital with major and minor clinics for the southern district of Scotland J FRASER Edinburgh M J 1918 xxv Med chir Soc Edinburgh 5

An alloy plate convex frame P C CLOONNA J Bone & J int Sug 1928 x 88

A bone holding clamp C L MULLEN Am J Sug 1918 v 5

Orthopedic supportive apparatus I JOTTOWITZ Orthopedic I senfeld Orthopedic care of cripple SCHMIDT Appendix Decrypted list of apparatus 9 Berlin Holb 11

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SURGERY OF THE BLOOD AND LYMPH SYSTEMS

Blood Vessels

Hemangioma J J M SHAW Lancet 1918 ccvii 69

Injuries of the large arteries encountered in clinical practice B LIPSCHUTZ Surg Gynec & Obst 1918 11 62

Coronary disease in surgical patients A T FIELDS Ann Surg 1928 lxxviii 32

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Multiple aneurysms and thromboses F P CUTLER and Sir T HORDER Proc Roy Soc Med Lond 9 8 xvi 327

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Aneurysm of the carotid artery in the cavernous sinus ligature of the internal carotid artery F J NATTRA S Edinburgh M J 1928 xxv 30

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Aneurysmal dilatation of the pulmonary artery in a case of congenital heart disease D E BEDFORD Ir c R y S c Med J ind 1918 144

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jatron T HUENERMANN Deutsche med Wchnsch
1927 lvi 801

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bolated vaccine J SANARELLI Semana méd 1927 xxxiv
1121

Anæsthesia

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special reference to the margin of safety and po toperati e
lesions of the lunæ J T GWATHMEY and C W HOOPER
Arch Surg 1928 xvi 416

The scope and utility of tests for carbon dioxide tension
and acetone in the alveolar air in relation to surgery and
anæsthesia P ROTH Bull Battle Creek Sanit & Hosp
Clin Battle Creek Michigan 1927 xvii 5

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anæsthetics on the minute cardiac output and blood pres-
sure an experimental study A BLACKLOCK Surg Gyec
& Obst 1928 xlii 7

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chloride W F KATZENSTEIN Zentralbl f Chir 1927
liv 1751

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narcotics on the parenchymatous organs W
SCHMITT and F LITTELER Zentralbl f Gynaec 92
h 266

Årten (1927) anæsthesia for children R SIFVERS
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oil ether colonic anæsthesia J S LUNDY Surg, Clin N
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Proc Roy Soc Med Lond 1927 xvi 189

Hyperæmias in spinal anæsthesia M RICHARD
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LEZA An Lac de med y farmacia 1927 i 159

Isotonic sodium—normal salt solutions A PFEFFER
Korn Beitr z klin Chir 97 cxl 108

The composition of procaine borate (borocaine) G W
C LILLYS J Am M Ass 928 xc 25

The alleodyne gism of magnesium sulphate and mor-
phine H BLACKMAN Am J Obst & Gynec 1928 xv
1

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YATES and I RAINI Ann Surg 1928 lx ii 124

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Surgical Instruments and Apparatus

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PHYSICOCHEMICAL METHODS IN SURGERY

Röntgenology

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röntgen ray in practice investigation and teaching G
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doses on the growth of vicia faba seedlings M C
REINHARD and K L TUCKER Am J Roentgenol 1928
xvi 71

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J Cancer Research 92 xi 28

The standardization of the röntgen ray dose O
GLASER and U V PORTMANN Am J Roentgenol 1918
xi 47

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the inverse square law to X-ray dosage E H QUIMBY
and W C SURGENT Radiology 928 xi 1

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and the biological effect of radiation in H M TERRILL
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juries following röntgen radiation in German clinics H
LOSSLY Acta radiol 1927 viii 345

Radium

Radium in adequate dosage in the treatment of cancer
D QUICK J Am M Ass 1917 lvi 2035

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Brit M J 928 23

Miscellaneous

Coordinated physical therapy W F MARTIN Bull
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1918 xviii 14

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xxi 477

The transmission and bactericidal action of sunlight
through various substances C L RODERICK and J K
SMITH Bull Battle Creek Sanit & Hosp Clin Battle
Creek Mich a 1928 xi 56

The cases of injury to the skin from trypanflavin with
intensive exposure to the sun I NOLTELIUS Muenchen
med Wchnsch 1927 lx i 149

The penetration of ultra violet rays into live animals
tissues D J MACHT W T ANDERSON JR and I K
BELL J Am M Ass 928 c 161

The action of ultra violet radiation on the bactericidal
activity of the blood J I GOCH JR and K KASSO
Witz J Am M Ass 1928 c 80

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Australia 981 16

Physical therapeutics and radiography during 1927
A B HIRSH Med Times 191 13

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CONTENTS

I	Index of Abstracts of Current Literature	iii
II	Authors	iv
III	Editor's Comment	v
IV	Abstracts of Current Literature	447-512
V	Bibliography of Current Literature	513-536
VI	Index to Volume XLVI	i-viii

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CONTENTS—JUNE, 1928

ABSTRACTS OF CURRENT LITERATURE

SURGERY OF THE HEAD AND NECK

- Eye**
- BROWN E V L Sight Saving Class Work from the Standpoint of the Ophthalmologist 447
- BEIGELMAN M N The Pathology of the Lachrymal Glands in Chronic Epiphora 447
- VERRY C D and HALBERTSMA K T A Two Cases of Parinaud's Conjunctivitis 447
- TOOKE F T Some Features of Glaucoma Complicating Indocyclitis 447
- JACQUES L Cataract and Postoperative Tetany 447
- TORTIN E P Does the Fovea Undergo Changes During Accommodation? 448
- CALHOON J P Angioid Streaks of the Fundus Oculi 448
- GRISCOMBE J M Angioid Streaks of the Retina 448

- Ear**
- MC CREADY J H Mastoiditis in Infants 448

- Neck**
- ROELL A The Azocarmine Mallory Staining of Goiters 449
- RIENHOFF W F JR and LEWIS D The Relation of Hyperthyroidism to Benign Tumors of the Thyroid Gland 449
- THOMAS H M JR Nodular Goiter with Hyperthyroidism 449
- HAINES S F Certain Difficulties in the Diagnosis of Exophthalmic Goiter 450
- WALTON A J The Treatment of Exophthalmic Goiter 450
- DUNHILL T P Anesthesia in Surgery of the Thyroid Gland 451
- CHAMPION A N Acute Stenotic Laryngitis of Infectious Origin 451
- ARAÚZ S L Contribution to the Study and Treatment of Laryngeal Papillomata in Children 452

SURGERY OF THE NERVOUS SYSTEM

- Brain and Its Coverings Cranial Nerves**
- MAGNANT J S Traumatic Cerebral Hernia 453
- BALADO M MOREA R and DONOVAN C Roentgenography of the Third Ventricle 453
- BRAY W R The Use of Hypertonic Solutions in the Treatment of Increased Intracranial Pressure 453
- PANCOAST H K Experience in the Treatment of Brain Tumors by Irradiation During the Last Thirteen Years 453

- PUENTE J J ORLANDO R and DOWLING E Morvan's Syndrome Unilateral Pachymeningitis and Arachnoiditis Intraspinal Lipiodol 454
- RIVIERE M Presentation of Children Who Were Suffering from Meningeal Hemorrhage at the Time of Birth 488

Spinal Cord and Its Coverings

- ELSBERG C A E Intradural Spinal Tumors—Primary Secondary Metastatic 454

Peripheral Nerves

- TOWNE B The Prevention of Injury to the Musculospiral Nerve 455

Sympathetic Nerves

- SIMEONI V Periarterial Sympathectomy in Freezing 455
- REYNOLDS F C and SLATER J K A Study of the Structure and Function of the Interstitial Tissues of the Central Nervous System 456
- RAMÍREZ CORREA Vital Staining of Del Rio Hortega's Microfilia and Its Application in the Diagnosis of Focal Processes and Tumors of the Central Nervous System 456

SURGERY OF THE CHEST

- Trachea Lungs and Pleura**
- LEE W C and TUCKER G Postoperative Pulmonary Atelectasis 457
- RIST E and SOULAS A The Technique of Bronchiography with Iodized Oil A Case of Unrecognized Bronchiectasis 457
- CUTLER E C The Etiology of Postoperative Abscess of the Lung 458
- Esophagus and Mediastinum**
- MORSE J L The Thymus Obsession 458

Miscellaneous

- CHAPMAN J F The Value of the Lateral Exposure in the Roentgen Examination of the Chest 459
- BOOTHBY W M and HAINES S F Oxygen Therapy 459

SURGERY OF THE ABDOMEN

- Abdominal Wall and Peritoneum**
- ROCQUES F An Endometrial Tumor of the Umbilicus 460
- LUGNIBUEHL M Operative or Conservative Management of Tuberculosis of the Peritoneum 460

McWORTER G L T so of the Ome tum with
out H ia Repo t of Tw Ca es
SEYMOUR H F A Ca f Pneum co cal P ton t
Durng th Puerp r m with R co ry

Gastro Intest nal Tract

BREITAO F E V l u l s f th Stom h
CHOSY R d B IAN L AC t b t t the
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NCAEL A C nd HUFF RD A R El ct e Local
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CAUDIER H P f at f the D od m—Ul
o Tra mat ? G n al d P r i t n t
Mik l z D a s th O ly T m t Re
e y

GOE EL Hu f th Aff t Loop Alt r R ctio
of th St m h fo D od n l Ulc a d M g
d ode um

PULSON M Ch Ulc rati C l i t s w th R f
r a e to B t l Etol gy Experimental
St dies

BRANCHI G Ad oc rcinoma f the Crcum 47
W KELEY C P G d G ADSTONE R J The
Relat Freque y of v a P s t u s of the
Vermiform App d as As ta ed by an
A l y f 5 0 0 0 C s 47

LEHMANN H Ac t App nd c t n the Aged 47

MEIL ÈRE J V cularizatio f the T s of the
Left Pa t of the Colo It S rgical Appl c t 472

MCHL C C C The Sympt m of C n e r of th
R ct m 472

ALLEN J H Th D o of C f the R ctum 472

P EI D B Th Ch c f Ope ti n C ci
oma of the R t m 472

So Ul R Th Op t f H H stm n Ab
domi al E t r p a t n f Ca c e r s f the Uppe
Pa t f the R ct m d of th R e t s i o m d
Ju t 472

L ver Gall Bladder Panc eas and Spleen 46

MOYAN AN SIK B The Gall Bl d d a d It In
f ct s 473

TO AND C G G t o I testinal Sympt ms Ma kin
Gall Bl d d e D e 473

WLLIS B C C g tal Cy ti Dilatat n of the
C m m o n B l Duct 474

BEAD E O A A Ca e f P r t e Cyst \ soc ted
w th D ab tes 474

T E J Sple t my n Fern cou Anæm as nd
L hæm s 474

SPENC A W The R l t s f Sple e t my for
I r p a Hæm h g i c a 475

BUR E Y ZUCARELLI J d DU L P Ch onic
R r t Hæm r h g Purp Spl ct my
Re ery 5 5

M scellaneous

H INGTO S W D ph gm t c H n 475

M LLAR T M W I t b d m l Hæm hag m
M l 475

GYNECOLOGY

Uterus 467

KUPZROG R n d M LE E G J Biochemical
St d s of h m s N S M d l t s R l t t th
Mu f th C r v i x Ut 476

HERTZL R A E D f dat f th Ut ru a
Co t u M a s r e s M y m a t a d Hyper
pl f th Endometri m 476

HE MAN J R d o l o m e l o r Operat e Tre tm t f
C f the Ut ru 476

C ZANO N R d m Th py f Ca c of the
Ce vl of the Uteru 477

C A Z Γ d R R RO A H R s l t s f Deep
R ntge Th py C of th Ut ru
D g P nod f F v e Y e r s 477

Adne al and Per te ine Conditions

RUBL I C T h l P t cy A St dy f St n l t y by
P r ut Insuffl t u d the k y m graph 4 8

FRANK R Th d GOLD E G R M A Clinical
D ta Obtain d w th th Femal S I l m e
Blood T t 478

- HIRST B C Ovarian Dysfunction Dependent on Abnormalities of the Ductless Glands 479

OBSTETRICS

Pregnancy and Its Complications

- DODDS G H An Analysis of the Results of the Wassermann Reactions Obtained from 2000 Consecutive Pregnant Women 480
- LANDA P A Pregnancy Labor and the Puerperium in a Case of Hemophilia 480
- LICPMANN W Abdominal Pregnancy Following Supravaginal Amputation of the Uterus 480
- POLAK J O The Influence of Fibroids on Pregnancy and Labor 480
- BUÉ V Indications for the Interruption of Pregnancy 482
- MUSSEY R D Toxemia of the Later Months of Pregnancy Its Prophylaxis and Treatment 483
- PARAMORE R H Chronic Nephritis Accidental Hemorrhage and Eclampsia 483
- MUSSEY R D and CRANE J F Operations of Necessity During Pregnancy 484

Labor and Its Complications

- GIBBONS R A The Causation of the Onset of Labor 484
- VAN AUKEN W B D Morphine and Magnesium Sulphate Infiltrations and Colonic Ether Instillations in Thirty Nine Consecutive Labor Cases 484
- BOIVEN P A Case of Rupture of the Aorta During Labor and a Case of Defect of the Septum 485
- RASCOL Delivery Expedited by Means of Large Median Anterior and Posterior Incisions Made in the Cervix at the Onset of Dilatation Because of Fetal Distress 485
- RASCOL Three Cases of Median Anterior and Posterior Incisions Made in the Cervix in the Course of Labor Prolonged by Rigidity of the Cervix 485
- OULÉ G Five New Cases of Subcutaneous Exteriorization of the Uterine Incision After Late Cesarean Section 486
- GARIPIUY Six Cases of Hemorrhage Following Delivery Which Were Treated by Clamps Left in Place 486
- BREHN W and WEITRAUK H V Separation of the Symphysis Pubis During Labor 486

Puerperium and Its Complications

- ZILLBOORG G Malignant Psychoses Related to Childbirth 487
- SEYMOUR H F A Case of Pneumococcal Peritonitis During the Puerperium with Recovery 487
- LATZKO W The Surgical Treatment of Puerperal Processes 487

Newborn

- RIVIÈRE M Presentation of Children Who Had Meningeal Hemorrhage at the Time of Birth 488

Miscellaneous

- FITZGIBBON G Some Points in Obstetrics for Reconsideration and Possible Revision 488

- RHENTER J Separation of the Mother and Child and Means of Preventing It 488

GENITO URINARY SURGERY

Adrenal Kidney and Ureter

- PARAMORE R H Chronic Nephritis Accidental Hemorrhage and Eclampsia 483
- MACKENZIE D W and HAWTHORNE A B Unilateral Renal Aplasia 490
- DELZELL W R and HARRAH F W Eleven Cases of Puptured Kidney 490
- CUMMING R C Polycystic Kidney Disease 491
- THOMAS G J and KINSELLA T I Some Data Concerning the Clinical Course of Renal Tuberculosis 491
- FISCHER A Malignant Tumors of the Kidney in Childhood 492
- CROSBIE A H Secondary Nephrectomy 492
- KRAMER S E Observations on the Rate of Ureteral Recanalization Preliminary Report 49

Bladder Urethra and Penis

- GREENE L B Traumatic Rupture of the Urinary Bladder in Children 492
- CABOT H Catheter Cystitis—A Misnomer 493
- OFMOND J K Diversion of the Urine in Intractable and Incurable Vesical Tuberculosis 493
- HAGER B H and MAGATH T B The Formation of Vesical Calculi 493
- KREUTZMANN H A R The Cause of Renal Back Pressure in Obstructive Lesions of the Urethra and Bladder Neck 493
- BAILEY H Rupture of the Urethra 494

Genital Organs

- ALYEA E P Vasoligament on a Preventive of Epididymitis before and after Prostatectomy 494
- COLLINGS C W Electrotome Excision of the Prostatic Bar 494
- HUNT V C Posterior Excision of the Seminal Vesicles 495
- KILFOY E J Teratoma of the Testicle—Diagnosis and Treatment 495

Miscellaneous

- BANDLER C G and MILLIAN J A The Practical Value of Chemical Analysis of the Blood in Urological Conditions 495
- COCKAYNE E A HARE D C LEPPER E H MARTLAND M and Others Discuss on the Treatment of Pyuria in Children 496
- STEVENS W E Unusual Urinary Calculi 496
- BRAASCH W F and HURLEY M V Granulomata in the Urinary Tract 497
- LOWSLEY O S The Relief of Congenital and Traumatic Incontinence of Urine by Operation 497

SURGERY OF THE BONES JOINTS MUSCLES TENDONS

- Conditions of the Bones Joints Muscles Tendons Etc
- SUTHERLAND C G The Differentiation of Osteitis Deformans and Osteoplastic Metastatic Carcinoma 498

- GROSS IAN J C n n t l R d U l r Syno t s 493
- Surgery of the Bones Joints Muscles Tendons Etc**
- BRI TOI W R A throd e 498
- GRA H T Th Stab l i z t i n of the Flail L g 498
- Fractures and Dislocat ons**
- HEY CR T L S E W Dam est t B a d k pu
tat n 499
- WLR N K L D B A C t but n t th R ntg n
D n o l of Ep phy e l S p t 499
- R FRT E I Th T tm t f Ankl nd Le
F a t r by the Delb t Amb latory Pl t 499
- SURGICAL TECHNIQUE**
- Operat e S gery and Technique Postope t e
Treatment**
- L W E nd TUCKER G Pot p t e Pul
mo ary At l t 457
- CUT R E C Th Et l y f P t p at Ab
s of the L 453
- F A I G M a d To R C A L F c t s D t e
m g th Res t n f th P t nt nd D 56
- SUT V H B Inad q t Ski P p rat n a a
C u of Pot p t e W u d Inf c t o 506
- C ANIC ANU A A AUD M nd FLORI I
Azotem a n S g r y 56
- WATER A B D n d d Su f s T at d by T n
n i Ac d 57
- FURE J L Th Mikulicz D 57
- J CAS V A S Chr nic P t perat e T tany 57
- Ant septic Surgery Treatment of Wounds and Infec
tions**
- W RYBERG M Antg S rum a d It
Th p ut e U G Ga g e e Appe d t 53
- Ga g e f the Lun 53
- Anæsthes a**
- DUNHI T P Ant th i a n Thy d S ng r y 45
- V N AUKEN W B D Morph e d M gnes m
S ph t i f l t t nd Colon Eth e In
stillatio Th ty Nme C se t L bo 484
- C HME J T a d HOOP C W Prelim n ry
Med cat o n Ge l Anæsthes w th Sp c i l
P h n e to the Ma n t S fety and P t
op at Les ns f the L g 58
- HUGHES C Th P e e t P t f Spin l A l
s 509
- H RAHAN E M J Br chial Pl ru N rve
Block 509
- B CRMAN H The All ged Syn sm of Ma n s m
S lphat d M rphin 509
- Surg cal In truments and Appar tus**
- POST M H St ilizat f Sharp I strume ts 509
- PHYSICO-CHEMICAL METHODS IN SURGERY**
- Ro tigenology**
- BALADO M MORE R d DO O AN C Ro nt
ge graphy f the Thud Ventr l 453
- Blood Vessels**
- BON V P A C e f R pt e f th A t Du
Labo nd C of D f t of the S p t m 48
- PEIBE ON J DE J t e r n u A m 500
- FE LI F A t o n A m 500
- MCQ O P A t ven A u ms 500
- L CEVE A t s An e sm 5
- YAT W M Acq e d t e eno s F tula 5
- LERICH R Traum t Arte ous A ur ms of
th Limb 5
- AU Y Th T tm t of l t e us An ms 5
- GRÉGOIRE R The Th pe t c I dicat Ar
t e s A u m f m th St dpo t of
Th r P thol g cal Anat my 5
- MI UL G d BR CCI TORSI H A Experime t l
Study f th Eff ts f De dat n of the I
fe Ve C at Its B g n n i n t the
R l i ve 5
- MOSZKOW C L Th T tm nt of V r o Veins
with S I j c t i o Comb ed w th Ve o s
L to 5
- CANT O O F lm nt Po tope at e Embol m 53
- KEY L Embol tomy a M th d of T tng
Embl Fu t n al D i t b s f th L
t em t i e 503
- ME E A W A S s f l t d l e b g Op a
t o n f Embol sm f th P lm nary A tery 54
- P ARSE H E The Immed t Effect f A t e r i l Li
g t n A Exp me t l St dy 55
- STERN W G Th S line Wheal T st M u
of th Blood S pply n A t e r i a l D t u b of
th E t r e m i t s 5
- Blood T ansfus on**
- F PI J Spl e t my a P r n c i u s Anæmi d
L k e m 474
- S ENC A W Th R ults f Spl t my f
P r p r Hæm r h g e a 475
- FRA K K T d GOLD ERG M A Clinical D ta
Obtain d w th the Femal S Horm ne Blood
T t 478
- LAND P A P e g n a c y Labo nd th P r p r ium
n a C of Hæm philia 480
- BAND ER C G a d KILLIAN J A The Pra t l
V lu of Ch m i c a l An a l y s f the Blood n U o
l g i c a l C d i t i o n s 495

PANCOAST H K Experience in the Treatment of Brain Tumors by Irradiation During the Past Thirteen Years

RIST E and SOULAS A The Technique of Bronchography with Iodized Oil A Case of Unrecognized Bronchiectasis

CHAPMAN J F The Value of the Lateral Exposure in the Roentgen Examination of the Chest

CARRANZA F and ROFFO A H Results of Deep Roentgen Therapy in Cancer of the Uterus During a Period of Five Years

WERENSKIOLD B A Contribution to the Roentgen Diagnosis of Epiphyseal Separations

DUNHAM F C and SMYTHE A M Tuberculosis of the Cervical Lymph Nodes in Infancy the Value of the Roentgen Ray in Its Diagnosis

Radium

HEYMAN J Radiological or Operative Treatment of Cancer of the Uterus

CAPIZZANO N Radium Therapy of Cancer of the Cervix of the Uterus

MISCELLANEOUS

Clinical Entities—General Physiological Conditions
MILCH H Indelible Ink Pencil Injuries 510

WEINTROB M and MESSELOFF C R Gas Gangrene in Civil Practice 510

WILMOTH C L Subacute Intra-nodal Lymphadenomatosis A Report of Twenty Seven Cases 511

General Bacterial Protozoan and Parasitic Infections
CASTELLANI A Notes on Blastomycosis Its Etiology and Clinical Varieties 511

CHRISTOPHERSON J B On the Treatment of the Actinomycosis Type of Mycetoma 511

BARNETT L L Colossal Hydatid Cysts 511

Ductless Glands
HIRST B C Ovarian Dysfunction Dependent on Abnormalities of the Ductless Glands 479

FRANK P T Endocrine Therapy 511

Surgical Pathology and Diagnosis
MACCARTY W C A Cytological Key to the Diagnosis and Prognosis of Neoplasms 512

476

477

BIBLIOGRAPHY

Surgery of the Head and Neck

H d
Eye
E
No d S es
M th
Ph ryn.
N ck

Surgery of the Nervous System

B nd It C C l N es
Sp l Co d It C e m
Fe phe l N s
Symp th t N rve
M c ll eo

Surgery of the Chest

Ch st W ll d B t
T h L g d Pl
He t d P ca d m
CE oph s d M d tu m
M ll neo s

Surgery of the Abdomen

Abd mu l W ll d P t m
G t I t tnal T t
L G ll Bl dd Pa d Spl
M ll neo

Gynecology

Ut ru
Ad l d P n t C d t
E tern l G tal
M ll eo

Obstetrics

P g y d It C mpl t s
L b d It C mpl t
P rper m d It C mpl t
N wborn
M c ll s

Genito Urinary Surgery

5 3 Ad renal k d y a d U t 5 8
5 3 Bl dd r U eth a d P n 5 9
5 4 G t t O g 53
5 4 M l lla eo 53
5 5
5 5

Surgery of the Bones Joints Muscles Tendons

C d t n f th Bo s J t M cl T do
F t
S rery of th Bo s Jo t M cl T do 531
F t
F t d D lo t o s 53
O thoped Ge l 533
5 7

Surgery of the Blood and Lymph Systems

Blood V l 533
Blood T sf o 533
Lymph V s l nd Gla ds 534

Surgical Technique

Ope t S g ry nd Te hniq P top t e
T e tme t
Antisept S g ry T tme t f W d d I 534
fect o 534
A æ th 534
S g l I trum t d lpp tu 535
5 3

Physicochemical Methods in Surgery

R ntg ol gy 535
R di m 535
M c ll eo s 535
5 5

Miscellaneous

Cl c l E t t —G al Phy lgc l C d t 535
Ge l B te l P to o d P stc I f c 536
t n 536
D tl Gl d 536
S g l P th l gy d D 536
H p t l M d cal Ed cat nd H t ry 536
5 5
5 6
5 7
5 7
5 8

AUTHORS

OF THE ARTICLES ABSTRACTED IN THIS ISSUE

- Allen J H 472
 Alvarez W C 468
 Alyea F P 494
 Arauz S L 45
 Arnaud M 506
 Auvray 501
 Babaiantz L 461
 Bailey H 494
 Palado M 453
 Bandl r C G 495
 Barnett L F 511
 Basset 468
 Beadle O A 474
 Beckman H 509
 Beigelman M N 447
 Bianchi G 471
 Bohnen P 485
 Boothby W M 459
 Bourde Y 505
 Braasch W F 497
 Bracci To si H 502
 Brain W R 453
 Brehm W 486
 Breitkopf I 461
 Bristow W R 498
 Brown F V I 447
 Bu c A 482
 Cabot H 493
 Calhoun J P 448
 Cintelmo O 503
 Cap zano N 477
 Carran A F 477
 Castellani A 511
 Champion A N 451
 Chapman J F 459
 Choisy R 461
 Christopherson J B 511
 Cockayne I A 496
 Collins S C W 494
 Cosacresco 468
 Cra nianu A 506
 Crane J F 484
 Crobie A H 49
 Cumming R I 491
 Cutler I C 458
 Delzell W R 400
 Dodds C H 480
 Donovan C 453
 Dowd I 454
 Dunham I C 505
 Dunhill T P 451
 Duvai I 505
 Flason F L 469
 Tl berk C A 454
 Fasiani G M 506
 Faure J L 507
 Fedeli F 500
 Fildes G 465
 Fischer A 49
 FitzCibbon G 488
 Florian I 506
 Fortin I I 448
 Frank R T 478 5 1
 Ganpuy 486
 Cauder H 470
 Gibbons R A 484
 Cladstone R J 471
 Coebel 470
 Coldberger M A 478
 Cray H T 493
 Greene L B 49
 Grégoire J 502
 Cri com J M 448
 Grossman J 408
 Gwathmey J T 508
 Hager B H 493
 Ha nes S F 450 459
 Halbertsma K T A 447
 Hanrahan E M Jr 509
 Hardisty P H M 464
 Hare D C 496
 Harrah F W 490
 Harrington S W 475
 Hartmann H 467
 Hawthorne A B 499
 Hertzler A I 476
 Hey Groves I W 490
 Heyman J 476
 Hurst B C 479
 Hooper C W 509
 Hosoi K 468
 Huffo I A R 461
 Hu hes C 509
 Hunt V C 495
 Hurley M V 497
 Jack on A S 507
 Jacques L 447
 Jones I 495
 Jordan S M 464
 Key F 503
 Kilroy E J 495
 Kill an J A 495
 Kinsella T I 491
 Kinsella A J 46
 Kramer S J 49
 kreutzmann H A R 493
 Kur rok I 476
 Lahey I H 464
 Landi I A 480
 Lat ko W 487
 Le ene S I
 Le W L 457
 Lehmann H 47
 Lippert H 406
 Leiche R 50
 Lew D 449
 Lepmann W 480
 Low ley O S 497
 Lu buehl M 460
 Ma ca ty W C 5 2
 Mackenzie D W 490
 Ma Lean H 465
 Magath T B 493
 Magnant J S 453
 Mann I C 468
 Martland M 496
 McCady J H 448
 McWhorter C L 460
 Mechlin C C 472
 Mill e J 47
 Mess loff C I 5 0
 Meve A W 504
 Milch H 510
 Milla I M W 475
 Miller F G Jr 476
 Mill l C 502
 Mocquot P 500
 Morea R 4 3
 Morse J L 458
 Moskowic L 50
 Moynahan S B 473
 Mu ey R D 483 484
 Naumann H 46
 Na ar 469
 Nckel A C 461
 Nyst om G 463
 O lando R 454
 Omond J K 493
 Ouli C 486
 Pamperl R 465
 Pancost H K 453
 Iaramore R H 483
 P ulso M 47
 Pea e H I 505
 Pembe ton J de J 500
 Ierman J 463
 I feiff r D B 47
 Polak J O 480
 P t M H 5 9
 Puente J J 454
 Ramirez Corra 456
 Rascol 485
 Pei chner 467
 Peynolds I F 456
 I henter J 488
 Pienhoff W F Jr 449
 I st F 457
 Rivi re M 488
 Robert I I 499
 I offo A H 477
 Roques F 460
 Rubin I C 478
 Schwar F 465
 Seco A C 464
 Seymour H F 487
 Simoni V 455
 Slate J K 456
 Smythe A M 505
 Soula A 457
 Soupault R 472
 Spence A W 475
 Stern W G 505
 Stevens W E 496
 Suthe land C G 498
 Sutton H B 506
 Tapie J 474
 Taylor F B 464
 Thalheimer M 467
 Thomas C J 491
 Thomas H M Jr 449
 Toland C C 473
 Tooke F T 447
 Torraca L 506
 Towne E B 455
 Troell A 449
 Tucker G 457
 Van Aken W B D 484
 Ver yp C D 447
 Wakeley C P C 471
 Walter A B 507
 Walton A J 450
 Weinber M 508
 Weintrob M 510
 W irauk H V 486
 We enskield B 499
 Willis B C 474
 W lmoth C L 5 1
 Wool ey J H 466
 Yate W M 50
 Zillboorg G 487
 Zu arelli J 505

EDITOR'S COMMENT

THE acute surgical conditions of the abdomen that are seen so frequently particularly in the large hospitals of our metropolitan and industrial centers call for an unusual degree of diagnostic acumen and surgical judgment—diagnostic acumen that can piece together often from broken fragments of accurate observations told in a language difficult of understanding a logical working conception of the pathological conditions present and surgical judgment that can temper the treatment to the lowered vitality and enfeebled resistance of a patient frequently in critical condition from shock from hemorrhage or infection. Too often because of the extent of the injury, the fulminant character of the infection or the delay in seeking medical treatment the final chapter of the story is a tragic one. For that reason it is all the more gratifying to read of the successful outcome of a case of abdominal injury such as that reported by Eliason (p. 469) so serious in character as to seem almost hopeless at the outset. This patient had sustained a traumatic rupture of the small bowel at the duodenojejunal flexure was operated upon sixteen hours after the injury and had eaten a meal before operation which resulted in a flooding of the abdomen with partially digested food when the omentum and transverse colon were delivered. In spite of these handicaps and an eventration of omentum and jejunum during an epileptic convulsion six days after the operation the patient made a complete recovery.

Some years ago Kanavel described an approach to the retroperitoneal portion of the duodenum (*SURG. GYNEC. & OBST.* 1914, XVIII, 484) and suggested the importance in cases of suspected visceral injury of raising the omentum and transverse colon to rule out the presence of retroperitoneal injury of the duodenum or the mesenteric vessels. In case seen within a few hours after injury a subserous discoloration from extravasated blood or a beginning hematoma just below the junction of the mesocolon and the posterior parietal peritoneum may be the only

visible evidence of a complete rupture of the retroperitoneal portion of the duodenum.

Champion's report of two cases of acute infectious laryngitis going on to a rapid and life-threatening occlusion of the air passages (p. 451) is an interesting account of another type of surgical emergency skillfully and successfully met. The question might be raised as to whether one would not be justified in the absence of a membrane of diphtheria bacilli and of cyanosis in waiting for the process to subside without the aid of tracheotomy, but one must agree that few conditions are more terrifying, both to parents and surgeon than the inspiratory dyspnea and retraction of the chest wall associated with fulminant infections of the larynx and trachea in young children.

Willis' discussion of congenital cystic dilatation of the common duct with the report of a successful case occurring in a twelve year old boy (p. 474) stresses the rarity of the condition and the importance of remembering the possibility of its presence in cases of recurring attacks of jaundice in childhood or early adolescence associated with a palpable tumor mass in the upper abdomen. This is further emphasized by the fact that in a number of cases the diagnosis was not made at the first operation and the chance of successful treatment thereby greatly diminished.

Lienhoff and Lewis' description of the pathological picture in the thyroid gland of seven patients with hyperthyroidism before and after the administration of iodine and their comparison of the picture seen in these cases with that found in a large number of cases of nodular and hyperplastic goiter with hyperthyroidism (p. 449) Key discussion of the technique and results of embolotomy based on a group of ninety five cases collected from the Swedish literature (p. 503) and Alvea's description of a simple method of ligating the vas to prevent the epididymitis which so frequently follows prostatectomy (p. 494) are three of many other important contributions reviewed in this month's number of the INTERNATIONAL ABSTRACT OF SURGERY.

INTERNATIONAL ABSTRACT OF SURGERY

JUNE 1928

ABSTRACTS OF CURRENT LITERATURE SURGERY OF THE HEAD AND NECK

EYE

Brown E V L Sight Saving Class Work from the Standpoint of the Ophthalmologist 1m *J Ophl* 1928 xi 3 s 118

Sight saving classes for school children were first opened in Chicago in 1919 with six pupils. Since then the enrollment has increased to 192.

In the author's opinion children with a visual handicap should not be segregated from those with normal vision unless their corrected vision is less than 20/60 to 20/70. Children with poor vision should be supplied with textbooks having large type; they require also more light, more room and more attention from the teacher than those with normal vision.

Brown concludes that no detriment to the eyes has resulted from the sight saving class work and that nearly all of the children in the sight saving classes can maintain their place in school and be promoted.

GEORGE P. McALIFF M.D.

Beigelman M N The Pathology of the Lacrymal Glands in Chronic Epiphora 1m *J Ophl* 1928 xi 3 s 25

Beigelman believes that unsatisfactory results in the treatment of persistent lachrymation may be due in part to lack of attention to the secretory portion of the lacrymal gland. The object of his article is to present observations which prove the possibility of a chronic dacryo adenitis with epiphora as the only symptom. He has examined pathologically six glands removed after sac extirpation. In four chronic inflammation of various degrees was found. Cellular infiltration was very noticeable around the excretory ducts and there were diffuse smaller areas of infiltration in the interlobular and intercaruncular connective tissue.

The distribution of the infiltration suggested extension of the inflammation by direct continuity from the subconjunctival tissue. Beigelman concludes that the histopathological changes noted by

him in the lacrymal glands are sufficient to explain hyperfunction of these glands with excessive lachrymation. The treatment of such hyperfunction should consist in X-ray irradiation or in surgical measures such as deep incisions, cautery, puncture or extirpation of the gland to diminish the secretion.

GEORGE R. McALIFF M.D.

Verry C D and Halbertsma K T A Two Cases of Parinaud's Conjunctivitis 1m *J Ophl* 1928 ii 79

The authors report two cases of a condition which closely resembled Parinaud's conjunctivitis except for the blood picture. The onset was relatively acute with homolateral glandular involvement, elevation of the temperature and enlargement of the spleen. Histological examination yielded findings resembling those described by Morax and Verhoeff. No microorganism was discovered.

THOMAS D. ALLEN M.D.

Tooke F T Some Features of Glaucoma Complicating Iridocyclitis 1m *J Ophl* 1928 xi 3 s 97

Tooke believes that glaucoma is a symptom secondary to some other condition, systemic or ocular. He reports five cases in which it was clearly secondary. The article includes photomicrographs showing deposits of pigment and other secondary changes in the drainage angle.

LYMAN A. COPPS M.D.

Jacques L Cataract and Postoperative Tetany 1m *J W Sc* 9 8 clxx 185

The author reports two cases of bilateral cataract occurring during the course of postoperative tetany and tabulates thirty-two cases collected from the literature. Only four of the patients were males. In nine instances the cataracts were associated with changes in the hair or nails. In most of the cases they were discovered within two years after thyroidectomy. In the author's second case there were only mild evidences of parathyroid deficiency.

In discussing the prevention of postoperative cataract Jacq emphasizes the necessity for prompt and a l q t control of the latent as well as the a t i v e m a f t a t i n s f e t a n y . In o n i s the a l m i n i t a t i o n f p a t h m n n s u f f e t a m u n t t o a b o l h l l n u o m u l t u r m a f e t a t i f l e l t o a r t t h e p g r e s o f t h e c a t a r a c t

Fortin E P Doe the Fo e Unde go Clange
Du ing Ac mmodation? (P L f e p)
m t m d f i s d t l a m l o)
R d p l d d 92 70

It is gen lly belie d th t th layers f th r t n a are h l d t g t h e r f i m l b u t t h a u t h o r h f u n d t h a t b t e n t h e n t n a l a n d e x t r n l l v r t h r s a n a o l a y e r m a d u p o f f i n e H n l e f b e s l s t h a n a n r o l o g n d t h a t t h e l a y e r o f t h e r e t i n a r e c a p a b l o f e p i a t i g t o t h i t n t T h a r t i l n t a n c o l e l g l a t s s h w i n g t h a r a n g m n t o f t h e l a y e r s d e s b d T h e e x t e n l i m i t i g l a y e r s o m t i e f m s a s t r a i g h t l i n e a n d o m t m a n a r c h d o n a n l i t s m s o b i u s t h a t t h e s e d i f f e r n t f o r m c o r r e s p o n d t d i f f e r e n t p h y o l o g i c a l a c t

In e p i m e n t s e g a d i n g n o t p t c v i n F o r t i n n o t d l o t h a t u n d e r r t a i c u m s t a n s e t h e l m t s o f t h e m o a c o f t h e f o a n c e a e d o r d e c e a s l i n x t e t A d c r e a s n t h d m e t e r o f t h e f i e l d o f o j e t o n c u s e l t h e r e p a i o n I n s t l l a t i o n i n t o t h e c j u n t i a a u s d c h a n g e i n t h m a c u l a M y o t i s t u r b e d e n t o p t e c i o n a n d m y d r i t s n e r a s e d t s c l a r n e s s

F o t i n b l i s t a t t h e a p p l c a t n o f t h e t h e o r y o f n e u r o n t o t h h t o l g y f t h e e y s a e r o s m i t a k e H e t h i n k s t h t t h e f o e a r d t h e n u o e p i t h e l i a l e r a e e c l u s i v e l y p t i a l s t r u t a n l n o t n e g l a r t i s s u e

In m o f h i s p i m n s t a i d t h n e w t a i F r t i h a s s e i b s l a g r t h a n t h f i b r f F u h w h i p a d t h r o g h t h p o t r i o p a r t f t h s l r t h e s e m d t o b e o f a m c l i n a t i s t h e y g e n e r a l l y t o k t h e a m s t a i n s t h d i l y m u s l e F r t i n u r g e o t h e r h t o l o g y s t o s t u d y t h e e s t r c t u r t h e e s t i c f c l f i b r s m a l l m u l s n t h p o t i r p r t o f t h v b l l w o l d p l n m n y d e t a l o f t h e h t o l o g y a l p a t h l o g o f t h e y

H e i s o n v i n c e d t h a t t h f o a s n o t a s m t h s u r f a c e o h i h a n i m g p r o l u c d b u t a t r o g n m a l u p o f v a r o s l m n t s h i h h a g e o n a c c m m o d t o n f t h e y e

A u d i C M M D

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O n l J O p h t 98 39

A n g l s t c a k s f t h o c u l f n d e r e f i t d e s c r b d i 880 b D o v e T h e y a p p a t a b o u t m u d d l i f a n l u u l l u r i b o t h v e s v n v a r i T h t r a k a r t a l e p r l t h a n t h r t i n a l v e s l a n l o t c o m m n e r a t e w t h t h l a t t e I n a d a n e d c a s t h l i n e s a r n g e d s o m e w h a t c i c u l a r l a r o u n d t h d i k a n d f m t h

c i r c l e o f f i r m e d o t h e r a n a s t o m o s i n g l i n e s r a d i a t e T h e s e l i n e s r a r e l y r u n b y o n d t h e e q u a t o T h e y r e a t f i t b r i c k r d b u t l a t e r h a g e t o b r o n a n t n s o m c i c e s t o g r a l l c o l o r a n f s t i l l i t e r t o

h t F q n t l t h e r a r e o t h e r f n l s c h a n g u h p g m c t l t i t h e l e j r s i o a t l a v e s m t t h g f t h h o i l a r a s f c h o r i l l a t r o p h y l a r g h i t p l q u i l l e p t i n a l h a e m o r r h a g e s

I t g a l l l v d t h t t h e s t r a k s o r i g i n a t e f o m h a m h y g e n t h e o u t e r l a y e r s o f t h e r e t n a o r h o i l T h r i m l i f f e c o f o p i n o n a s t o w h e t h t h l i e t h u n t h e l a y e r o f t h r t n a o t h e h o r l A c o r l i g t C l l n t h e y a r e t h e e u l t o f l p o t o o f i n s o l u b l c r y t a l s f o m e l b y t h b r a k i n g u p o f t h h a e m o g l o b i n h i c h a r e d p o s t e d l i n g t h b a n c h e s f t h s h r t p o s t e r i o r l a v a t e n t h p r a s c u l a r l y m p h s p a c s C o l l n v p l n s f u r t h r t h a t t h u b h o r d a l h e m o r h a g r u l t n t r p h y f t h c h r o i d

T h a t h p t v v t y p c l a s t h t o f a m n t h i t f i v a r s f g h o e f a m l y h o r y t o g l y u g g e t d a v a s c u l a r d s t u b a n c e

L i m A C P M D

G s c o m J M A n g i d S t r e k s f t h e R e t i a
J O p h t 98 395

G r c o m r p o r t a s e o f a g o l d s t r a k s o f t h e r t n o u r n g n a c l o d m a n s i x t y i g h t y e a r s f a g T h a s n o v i b l e e i d e n c e o f e t n a l h a e r h g e s o r p r o u r t i a l o c h o d l d i a T h e c o n d t o a b i l a t e r a l v i s i o a 2040 i n a h v A p c u l i a l a t c o l o e d p i g m e n t a t i o n o f t h k i n f t h e f o c h a d w e p l i n d b y C o t h e d m a t o l g s t n l t e d s a p g m t p o l f e r t n d u t n u r o t o p h i f l u e s T h e W a s r m a n t t w a n g a t i e

A n g o i d s t a k f t h r t n a a e u s a l l y a t t r i b u t d t o h a m o r h a g b u t t h r e p o t d t h s c u a p p a d t o b u l d u t G r c o m s g g e s t t h a t t h p a m n t d i t u r b a n e m a y b l u t o p l i f a t o o f p t h l i a l p g n t a u e l b y a n e u o t o p h h a n g a f f c t u g c a t b n c h e s o f t h e f i f t h r v i c l d g t h c i l r y n s

L i m A C P P M D

EAR

M C e d y J H M s t d i t s n I n f n t s l l l
M J q s 90

I n t h a s e o f n f a t i t h n u n p l e d g a t r o n t t n a l s y n d r o m a t h r o g h e x a m i n a t i o n o f t h e a r s h o u l d b m a l T h l i m m a y b t h l a l g r a v h a d h o b l i n g a l l i g h t f l x o r i t m v b e t h n a l l u t r l a n l t h o t b l i n g r l i g h t r l o r i t m a y f a n m a l a p p a r n t h a l i g h t a l d s o m d g r e e f b u l g i n t h e x t e m u p r p s t p a r t v v i t h e p t u r l n d a n i m m e d t m y r n g t o m y I f t h e y m p t m s t h e p s t o p e n g f t h e m s t d n e s y T h a u t h o b e l t h a t i n a l i t o n t h r d i n a r y t h q t e g m n a n d v g o m a t c e l l h l d b o p e d H e p e f m s t h o p a t n

under ether or ethylene anesthesia and reports that in 114 cases there were no anesthetic deaths

GEORGE R. McALIFF, M.D.

NECK

Troell A. The Azocarmine Mallory Staining of Goiters (Ueber Azocarmin Mallory Färbung an Strumen). *J. Ch. f. Klin. Chir.* 1927 cxi 1 754

This article is a continuation of the author's previous reports on the azocarmine Mallory staining in which he called attention to the difference in the follicle content of the Basedow goiter as compared with the colloid of the simple goiter. His material including that previously reported consisted of 161 cases. The tissue was first fixed in susa. In the diffuse goiters the color of the follicle content of the thyroid was found to vary quite consistently with the clinical toxicity of the condition. The author summarizes his findings and conclusions as follows:

Clinically toxic goiters—Basedow goiters—usually showed a blue staining and clinically non toxic goiters a red staining of the follicle contents. Variations from this tendency were no greater than possible small variations in the parallelism between the clinical toxicity and the specific morphology of the goiter.

Nodular goiters did not show this characteristic staining to the same degree but blue follicles predominated much more frequently in the toxic than the non toxic cases and red follicles predominated more frequently in the non toxic than the toxic cases. This difference in staining cannot be due to the consistency of the follicle contents alone as web like contents which usually stain red often also stain blue. A chemical basis for the difference must be considered. Not only this difference but also the findings of determinations of the hydrogen ion concentration of fluid squeezed from goiters and our present knowledge of the clinical aspects, histology and physical chemistry of goiter suggest a difference in the functional value of the follicle content of different thyroids and in different parts of the same thyroid which may lead to a better understanding of the clinical aspects of goiter and the effect of the usual methods of treatment.

GLAS (Z)

Rienhoff W. F. Jr. and Lewis D. The Relation of Hyperthyroidism to Benign Tumors of the Thyroid Gland. *Arch. Surg.* 1928 xvi 79.
Thomas H. M. Jr. Nodular Goiter with Hyperthyroidism. *Arch. Surg.* 1928 xvi 117.

RIENHOFF and LEWIS studied 109 consecutive cases of nodular goiter and hyperthyroidism reviewed 910 cases of hyperthyroidism and studied 7 patients from whom sections of the thyroid gland were removed before during and after the administration of iodine.

Before the administration of iodine marked hypertrophy and hyperplasia were apparent in all cases. The glands could be divided into two groups. In one

group the acini were normal in number but increased in size and showed papillomatous infoldings and in the other group they were small and more numerous but without infoldings. These types were frequently mixed in the same gland. One type predominating.

The remission induced by iodine was characterized by a change in the size and structure of the cells, a decrease in the lymphocytic infiltration and increased amounts of fibrous tissue. In this stage certain areas did not fully participate in the regression forming small areas of active parenchyma whereas other areas went far beyond the average degree forming the so called involutinal bodies.

The involutinal bodies fall into three groups. Those of the first group show a formation of large epithelium lined cysts containing colloid those of the second group an encapsulated area of dilated colloid containing acini and those of the third group actual disintegration of the parenchyma. Through pressure on the surrounding lobules and an increase in the stroma these involutinal bodies suggest the appearance of fetal and cystic adenomata.

This type of involution occurred more frequently in glands with hyperplasia of the small acini type. The large type with papillomatous infoldings gave rise to areas of hyperinvolution made up largely of cysts and encapsulated areas of dilated colloid containing acini.

The clinical improvement paralleled the extent of the involution. Cases in which there were spontaneous remissions and exacerbations showed nodules which were identical with the involutinal bodies except that they were larger. During an exacerbation the epithelium underwent papillomatous infolding in the cystic and dilated acini. In the areas of hyperinvolution during an exacerbation the peripheral acini were hypertrophied and hyperplastic. During a remission these acini became more widely separated through further central disintegration of the body. The areas of hyperinvolution can be clinically detected as tumors but do not represent true neoplasms.

Of 109 severe cases of nodular goiter 8 were cases of true benign adenomata differing totally from the involutinal bodies described though the remainder of the gland showed hyperplasia and hypertrophy. In 38 cases the nodular bodies corresponded to involutinal bodies the rest of the parenchyma being hyperplastic. In the remaining 63 cases the palpable nodules represented areas of hypertrophy and hyperplasia the remainder of the gland being normal. These areas were encapsulated the thickness of the capsule usually corresponding to the duration of the disease. In older patients these areas showed besides the characteristics of hypertrophy and hyperplasia those of retrogression and involution. If these areas were shelled out or removed the hyperthyroidism disappeared clinically.

The authors conclude that hyperthyroidism is invariably associated with hypertrophy and hyperplasia of the thyroid parenchyma either in its totality or in circumscribed areas. Nodules in these

glands are due in the majority of cases to areas of regression which become encapsulated and enlarged as the disease process progresses. In a small percentage of cases the nodules represent areas of hypertrophy and hyperplasia. In another case normal thyroid and only a small minority of cases true benign adenomata. There is no proof that benign adenomata give rise to hyperthyroidism.

THOMAS analyzes thirty-two cases of nodular goiter associated with hyperthyroidism but without the typical picture of exophthalmic goiter. He divides these cases into two groups: those of patients below and those of patients above forty-five years of age. Eleven of the thirteen younger patients showed typical hyperplasia and hypertrophy of the thyroid gland. One patient showed a small amount of hypertrophy and hyperplasia and presented clinically a doubtful picture of hyperthyroidism. Another patient had a typical fetal adenoma, involution of the gland without hypertrophy and hyperplasia, and localized areas of hypertrophy and hyperplasia.

In the nineteen patients more than forty-five years of age there was much less evidence of glandular hyperactivity but on careful search hypertrophy and hyperplasia were found in section in every instance. Eleven of these patients suffered from heart disease. Of the ten patients who received iodine three showed marked improvement, three showed slight improvement, two received no benefit and two died.

The average hemoglobin content of the blood of the older patients was 66 per cent, a third that of the younger patients 74 per cent. These estimates however include two patients with severe secondary anemia. The author is of the opinion that the extra load placed on the circulation by the hyperthyroidism factors not only decompensation but also a rise in the basal metabolism. He believes it probable that there is a close parallelism between the amount of hypertrophy and hyperplasia of the thyroid gland and the severity of the symptoms of thyrotoxicosis. F. S. M. R. M. D.

Haines S. F. Certain difficulties in the diagnosis of Exophthalmic Goiter. *J. I. St. M. S.* 98, 3.

Exophthalmic goiter is therapeutically defined as a disease originating with multiplication of the thyroid of unknown origin which results in the production and delivery to the tissue of abnormally high secretions and inactivity. In cases increased in the thyroid secretion. The symptoms of the disease include those dependent upon an increase in the basal metabolism and certain characteristic phenomena which are presumably dependent upon the abnormal secretion. The characteristic exophthalmic state, the characteristic psychomotoric symptoms, the elements and the tendency toward the development of gastrointestinal crises with vomiting and diarrhoea. Frequently the fingernails and toes are partly and irregularly separated from the nail bed.

The symptoms of hyperfunctioning adenomatous goiter are dependent upon an excessive quantity of normal thyroxine in the tissues.

Determination of the effect of iodine administration is of value in the differentiation of the two diseases and in the establishment of the presence of exophthalmic goiter. After the administration of iodine in sufficient doses the progress of exophthalmism is stopped, the useless purposeful movements, the psychomotoric status, the stare and the vomiting of the crisis are controlled and in most cases a drop occurs in the basal metabolic rate. The effect of iodine administration upon the basal metabolic rate is of value only when several consecutive tests are made to determine whether the test is truly basal.

Difficulties in the differential diagnosis are frequently met in neuroses, essential hypertension and Parkin's syndrome.

In the cases of patients who are seriously ill any combination of severe gastrointestinal and cardiovascular disturbances should suggest the possibility of hyperthyroidism. Hyperthyroidism should be considered also in cases of diabetes not responding to insulin, a anticipated diagnosis in cases in which the ration of operations other than those on the thyroid gland is out of proportion to the expected results.

Walt N. A. J. The Treatment of Exophthalmic Goiter. *B. H. M. J.* 98, 83.

In exophthalmic goiter operation should always be preceded by medical care. In the author's cases the patient is admitted to the hospital for rest and careful control of the diet for at least a week before the operation. Whether the patient is told or not that an operation is to be done depends upon the individual case but one of his near relatives is informed. During the week before the operation a careful study of the gastrointestinal cardiac nervous and general condition is made. In some cases the basal metabolism is determined but this is not a routine procedure as it sometimes causes marked nervous disturbances. A light diet is given. Stimulants are avoided. Large quantities of fluid are administered and one half hour before the time at which the operation is to be performed the patient is given a pint of saline solution given orally by rectum.

Lugol's solution is given in 3 minims three times a day. Large doses and the administration of the smaller doses for a period longer than four days increase the symptoms. Different types of goiter require different methods of iodine. In the treatment of colloid goiter simple compounds such as iodide of iron are used. Rapidly increasing or increasing in parenchymatous goiter requires thyroid extract. Exophthalmic goiter is benefited only by Lugol's solution. Iodide of sodium has no effect upon the thyroid extract nor does the hyperthyroidism. Lugol's solution is beneficial but does not effect a cure.

When the condition is very poor a cardiologist is consulted. As a rule the administration of digitalis or quinidine will control the heart condition.

tion In the cases of nervous patients sedative drugs are occasionally indicated for the relief of insomnia

X-ray treatment does not obviate the necessity for operation but in cancer it is of great benefit It does not increase the difficulty of operation

The selection of the time for operation is of great importance It is rarely necessary to operate during the first six months of the disease as during this period medical treatment is usually beneficial In severe acute cases however an operation is done if the improvement under treatment with Lugol's solution is slight As heat has an unfavorable effect on patients suffering from goiter operation is not performed during the hot summer months

Three clinical types of toxic goiter are recognized

1 The condition that occurs as the end result of colloid goiter Patients with this type of goiter react well to treatment operation is not associated with much risk

2 Goiter associated with hyperthyroidism from the beginning Patients with this condition show marked improvement under preliminary medical treatment and make a good recovery following operation

3 Goiter appearing at about the menopause Patients with this condition are extremely nervous stand operation less well than others and convalesce slowly after operation Their condition can be much improved by pre-operative treatment

In the induction of anaesthesia chloroform should never be used as it is almost a specific poison In the author's cases the induction is begun by the rectal administration of 3 oz each of ether and olive oil This is given in the patient's room at the time at which the saline solution has been given three quarters of an hour before the time for the operation In the operating room the anaesthesia is continued by the administration of a small amount of ether on an open mask or by the use of warmed ether vapor

Whenever possible a considerable portion of the gland is resected All of one lobe the isthmus and the lower quarter of the other lobe are removed and the vessels of the superior pole of the remaining lobe are ligated In every case a drainage tube is inserted

After the operation the ether and olive oil are washed out of the rectum Sufficient morphine and atropine are used to control restlessness and large quantities of water are given at first by rectum and later by mouth Lugol's solution is of value to control postoperative hyperthyroidism Quiet and coolness are important

The immediate mortality is 5 per cent and the late mortality under 2 per cent In the author's cases a complete cure was obtained in 55 per cent and sufficient relief for the patient to earn his living in 81 per cent

The postoperative course passes through the following stages (1) the stage of reaction which lasts for three or four days (2) the stage of primary

improvement which is manifested within a fortnight of the operation (3) the stage of primary relapse which occurs as a rule when the patient returns home and lasts for from four to six weeks and (4) the stage of apparent cure which is reached after a few months

MARCUS H HOBART M D

Dunhill T P Anaesthesia in Thyroid Surgery

Po Roy Soc Med Lond 19 8 131 345

The induction of anaesthesia for thyroid surgery may be rendered difficult by compression of the trachea in the neck tracheal and bronchial irritation or chronic bronchitis associated with a toxic condition causing heart failure acute toxicity causing great mental unrest or extreme tachycardia or both or associated conditions such as uncleanness of the mouth or tonsillar infection

The following types of anaesthesia have been employed by the author

1 Ether (a) open method (b) closed method (c) vaporized method (d) endotracheal method (e) rectal method

Nitrous oxide and oxygen (a) alone (b) combined with local anaesthesia (c) combined with ether

3 Chloroform

4 Local anaesthesia both local infiltration and regional

Chloroform anaesthesia is dangerous but its employment gives a freedom from bleeding not to be obtained by any other method of general narcosis Ether has rightly replaced chloroform in the great majority of cases It may be given in a number of ways either alone or in combination (1) on an open mask (2) by a closed method (Clover apparatus) (3) vaporized and warmed after it is vaporized (4) endotracheally or (5) by rectum All of these methods are safe and effective Ether given by any method tends to increase bleeding which is troublesome Dunhill prefers its administration by the endotracheal method but has found the rectal method of value in some cases

Nitrous oxide with oxygen is a most valuable anaesthetic Local anaesthesia gives a practically bloodless operative field and therefore saves much time during the operation

In cases with established auricular fibrillation local anaesthesia is best

MORRIS H KAHN M D

Champion A N Acute Stenotic Laryngitis of Infectious Origin

Texas State J M 1928 xviii

669

Acute stenosis of the larynx produces alarming symptoms Its causes vary The author reports two cases which simulated laryngeal diphtheria but were due to an undetermined infection

The first was that of a boy twenty two months old who three nights previously had had a sudden attack of coughing and respiratory distress with a temperature varying from 100 to 103 degrees F The cough was of a barking character but not severe The voice was husky The dyspnoea was

so extreme that the child was unable to sleep at night. On the second night he received 10,000 units of diphtheria antitoxin. When he awoke by the author the respiratory rate was very rapid and there was marked inspiratory dyspnea with retraction of the sternum and ribs but no cyanosis. No membrane or exudate was visible in the fauces or pharynx. Examination of the chest as negative except for an inspiratory heez. A ventilation of the chest did not show a foreign body. The thymus was enlarged. The ant and laryngeal cultures were negative. Bacteria diphtheria were positive for staphylococci, streptococci, and pneumococci. The arytenoid cartilages and piglotic folds and ventricular bands and subglottic mucosa were red and swollen and only a slit-like aperture remained for respiration. There was no membrane or exudate. Tracheotomy was performed and as follow d by recovery.

The second case as that of the twelve month old child. The first patient had a very similar history and course.

The cause of the condition in these cases is unknown but was probably a streptococcus infection. To explain the marked changes in the larynx the author suggests that either the causative agent had a predilection for the larynx or the patients had a hereditary weakness to infection of the laryngeal tissues.

In the diagnosis the condition must be differentiated from laryngeal diphtheria, the early stage of measles or scarlet fever, bronchopneumonia, influenza, angioneurotic edema, bulbar polypoid diphtheritic polyp is an important body.

In these cases reported the diagnosis rests chiefly on the laryngoscopic findings.

The indications for treatment are clear. There is no specific therapeutic measures. The immediate problems to provide ample breathing passage and this is easily accomplished by tracheotomy. Intubation is unsatisfactory because the tube traumatizes the tissues and is difficult to introduce and keep in place. In these cases the danger of aspiration pneumonia. Tracheotomy should be planned when the patient finds it necessary bringing the necessary measures of preparation into play. R. A. B. S. M. D.

Arauz S. L. Contribution to the Study and Treatment of Laryngeal Papillomatosis. Children (Cincinnati) 6: 1-10, 1937. The author reports 15 cases of laryngeal papillomatosis. The disease is characterized by the presence of benign papillomas of the larynx. The disease is very frequent after any method of treatment. Histologically they are benign but clinically they are dangerous because of their tendency to recur. The etiology is unknown. The chief symptom is cough and dyspnea. The cough usually begins when the papilloma excites a reflex. The symptoms of stridor are present. The author advises tracheotomy for the treatment of any child with laryngeal papillomatosis. The tumor can be removed by laryngotomy. Arauz uses the Killian tube as modified by Pfeiffer and makes the incision in the upper trachea.

Laryngeal papillomatosis are characterized by a chronic virus infection and an outer one of the larynx. The disease occurs in early childhood and the recurrence is very frequent after any method of treatment. Histologically they are benign but clinically they are dangerous because of their tendency to recur. The etiology is unknown.

The chief symptom is cough and dyspnea. The cough usually begins when the papilloma excites a reflex. The symptoms of stridor are present. The author advises tracheotomy for the treatment of any child with laryngeal papillomatosis. The tumor can be removed by laryngotomy. Arauz uses the Killian tube as modified by Pfeiffer and makes the incision in the upper trachea.

The prognosis is good if the treatment is given in the first period of dysphonia. If treatment is not given until late and tracheotomy is necessary because of persistence of the dyspnea after removal of the tumor the prognosis is doubtful.

Local and general medical treatments have usually proved unsuccessful. It is not true that tracheotomy is a drastic measure in the case of the tumor. The prognosis is doubtful. The tumor persists after this operation and the tracheotomy tube must be worn permanently. Tracheotomy should be done only as an emergency measure for laryngeal dyspnea.

Laryngofissure is less merited than tracheotomy and does not prevent recurrence. Roulha reports a case in which the patient had a second attack. The author performed laryngofissure in this case with poor results.

Some excellent results from the use of radium have been reported but the author has given this method up because he found it ineffective and associated with the long series of complications. The best treatment is the bilateral dissection of the larynx with removal of the tumor. If necessary, a tracheotomy may be required. In some of the author's cases the tumor has been cured after five years. A. D. C. M. R. M. D.

SURGERY OF THE NERVOUS SYSTEM

BRAIN AND ITS COVERINGS CRANIAL NERVES

Magnant J S Traumatic Cerebral Hernia (1
hernie cérébrale post-traumatique) *Re de l'r*
Par 1917 11 156

From experimental work on dogs the author concludes that the development of a traumatic cerebral hernia depend upon a lesion of the dura mater subjacent to the defect in the skull attrition of the cerebral tissue and infection. Secondary factors are cicatricial organization of the traumatized area blood stasis with oedema and macroscopic or miliary cerebral abscesses near the region of the cranial defect.

After the trauma there is a vascular oedema which later becomes inflammatory. The development of the oedema is accompanied by an influx of erythrocytes leucocytes round cells and undifferentiated cells. The cells play two roles. By reason of their considerable number and by their struggle against the infection they cause a growth of the cerebral substance from below upward. The clot shows an influx of very numerous macrophage cells rapid organization of a tissue of budding granulations and development toward the formation of a cicatricial connective tissue. The sclerotic tissue arranges itself obliquely converging toward the top with blood stasis and oedema and forming a veritable constricting ring around the cerebral zone. Through this ring the hernia pushes and its size is increased by progressively increasing venous stasis.

Cerebral hernia is most dangerous when it occurs in the motor zone. An abscess below or near the cerebral prolapse increases the size of the hernia and may necessitate further operations.

Trophylactic treatment and several curative treatments are described. The author recommends the Leriche operation. In the first stage of this procedure cutaneous flaps are folded back around the hernia. In the second stage the bony orifice is enlarged by trephination until healthy tissue is reached and the pedicle and lesions of the dura mater are exposed. In the third stage tampons of gauze are placed around the hernia. At the end of fifteen days the hernia begins to diminish in size and within a month it disappears.

If the cranial defect is the size of a 5 franc piece and situated in the frontal or parietal region cranioplasty should be done. If the defect is the size of the palm of the hand the patient should wear an external plaque held in place by bands. When the defect is relatively large a metallic plaque or dead human bone should be employed for its closure. When it is of moderate size preference should be given to an autoplatic surgical procedure with the use

of a pedicled flap or an osteoperiosteal or cartilaginous graft.

Four of Leriche's cases and one case treated by Chavannaz are reported in detail. *Anna L. Pace*

Balado M Morel R and Donovan C Roentgenography of the Third Ventricle (La radiografía del tercer ventrículo) *Arch argent de*
ol 9 13

The authors studied the size and relations of the third ventricle in a patient who had died a few hours previously of tuberculous peritonitis. They report their findings in detail.

For the direct injection of air into the ventricle for ventriculography they place the subject with his shoulders at the edge of a table and his head hanging over the edge and resting on a cushion. The roentgenograms are made with the use of a Coolidge radiator tube 30 ma of current a 4' in spark gap a distance of 8 in from the tube to the plate and an exposure of two seconds. For a lateral roentgenogram the incident ray is made to fall at the upper border of the ear the head being maintained in the horizontal position. When an anteroposterior roentgenogram is made the ray falls at the level of the glabella the head being held in a sagittal axis with the chin flexed on the thorax. In order to prevent distortion of the picture great care must be ever used to keep the head in position. The authors are now working on an arrangement by which the pictures may be taken with the tube beneath and the film above the skull. This will give pictures that are clearer and nearer the normal in size.

ALDRICH MORGAN M D

Brain W R The Use of Hypertonic Solutions in the Treatment of Increased Intracranial Pressure *B I M J* 1918 186

The author gives a brief but quite comprehensive review of the use of hypertonic solutions to lower intracranial pressure the condition under which these solutions should be employed and the best method of administering them in each type of case.

ERIC OLIVER M D

Pancorist H K Experience in the Treatment of Brain Tumors by Irradiation During the Past Thirteen Years *Br J R ologist* 1928 xiv 1

This article is based upon forty eight tumors of the cerebrum. Twenty were classified pathologically. Of the ten were infiltrating gliomata five were cystic gliomata one was a neurofibroma and four were endotheliomata. Twenty five of the forty eight patients are living. Five of the five who are still alive were treated more than five years ago. Twelve patients are known to be dead.

grow more rapidly and either cause pressure upon the dura early or more or less suddenly extend into the vertebral canal through the intervertebral foramina or by bone destruction. Not rarely secondary metastatic growths cause an acute softening of the spinal cord through interference with its blood supply.

A short history suggests that the neoplasm is extradural. Radicular pain is less often an early symptom in cases of extradural expanding lesions because such growths do not often begin in the sheath of or near the nerve root. Not rarely the interposition of the firm dura and of a buffer of spinal fluid causes the early cord disturbances to be vague. A flaccid paraplegia occurring within a few days of the onset of weakness of the limbs is noted almost exclusively in malignant extradural disease.

Contralateral motor or sensory disturbances or a reverse Brown Sequard syndrome are observed most frequently in cases of extradural tumors.

Changes in the bone structures observable in the X-ray films occur in more than one half of the cases of extradural tumors although bone destruction is not always demonstrable with the X-ray. Such changes are evidenced by widening of the canal, a localized defect in one or more vertebrae, scoliosis at or above the lesion, the shadow of the tumor itself or a sinking together of the bodies of several vertebrae. In intradural growths with the exception of the giant growths of the conus and cauda equina bony changes are rarely noted in the roentgenogram.

In most cases manometric studies of the spinal fluid have shown a more or less marked spinal subarachnoid block. The exceptions were cases of vertebral chondroma derived from an intervertebral disk. The spinal fluid was often yellow and contained an excess of globulin or total protein, but the increase in protein was never so high as in intradural compression of the cord.

In cases of extradural tumors and of intradural tumors which are attached to the dura, the withdrawal of spinal fluid is often followed by a distinct increase in the subjective and objective signs of cord disturbance. The lumbar puncture may therefore clarify the picture and should be preceded and followed by a careful neurological examination.

Compression of the spinal cord by tumors not derived from the cord roots or membranes is of frequent occurrence. Such growths must be grouped according to their location and origin. Many extradural spinal tumors begin in the bony framework of the spine or in the adjacent soft tissues. They may be primarily within the vertebral canal or may invade the extradural space secondarily. The histological structure of these growths is subject to considerable variation.

If the variations in the clinical course of extradural tumors are to be understood the neoplasms must be grouped not only according to their histological structure but also according to their relation to the vertebral canal. From the latter view

point extradural tumors may be divided into (1) the primary extradural (2) the secondary extradural (3) the metastatic extradural. The author discusses these three groups in detail. Of particular interest in his series of cases were seven chondromas derived from intervertebral disks. Such tumors are small hard growths from 1 to 1 1/2 cm in length which arise from and are firmly fixed to the anterior wall of the vertebral canal. They have been found only in the cervical region and compress the dura on its ventral aspect. No bone changes were visible in the X-ray picture and in many cases there may be no subarachnoid block and no change in the spinal fluid. As a rule these growths must be approached by the transdural route. If the longitudinal extent of the neoplasm is so great that its limits cannot be exposed by the removal of three or four arches it is probably irremovable.

GILBERT C. ANDERSON, M.D.

PERIPHERAL NERVES

Towne, E. B. The Prevention of Injury to the Median Nerve. *California & West. Med.* 19 8 xxxviii 73.

The author calls attention to common errors in the technique of operations on the humerus which are associated with danger to the radial nerve. The most frequent error is improper placement of the incision. When the incision is made incorrectly the unscathed nerve may be divided, included in a suture, or crushed in a hemostat. In the open reduction of humeral fractures the nerve is often left lying upon the ruptured periosteum so that it is included in the callus.

For the surgical treatment of osteomyelitis Towne advocates Henry's incision by which the entire shaft of the humerus can be laid bare without danger to the nerve. To prevent inclusion of the nerve in the callus following the open reduction of a fracture he advocates the interposition of live muscle between the bone and the nerve.

ERIC OLDBERG, M.D.

SYMPATHETIC NERVES

Simeoni, V. Periaxillary Sympathectomy in Freezing (La simpatectomia periaxillare nei congelamenti). *Atti del cl.* 19 7 vi 1 76.

The author reports experiments on animals in which periaxillary sympathectomy was performed after frost bite, the operation being done on the same side as the lesion in some cases and on the opposite side in other.

In cases of serious lesions the ulcerations were sometimes affected favorably by the operation, but the benefit was only temporary. When the lesion was less serious and particularly when it appeared late and was not very deep sympathectomy sometimes aided repair. However it did not retard the development of lesions due to freezing. When it was performed on the normal side it did not have any

SURGERY OF THE CHEST

TRACHEA LUNGS AND PLEURA

Lee W E and Tucker G *Iostoperative Pulmonary Atelectasis* *Lilintic M J* 19 8 xxx 84

The authors believe that a great many postoperative pulmonary complications which are called pneumonia are in reality atelectasis. They distinguish three types of atelectasis—the massive the lobar and the lobular.

The etiology of atelectasis is unknown but it is generally agreed that immobilization of the diaphragm and bronchial obstruction are important factors. Plugging of a bronchus causes absorption of the trapped air by the circulating alveolar blood which results in collapse of the portion of lung corresponding to that bronchus.

The authors base their conclusions on autopsy findings and the observation that the removal of obstructing secretions from a bronchus by aspiration frequently causes the rapid expansion of an atelectatic area of lung. In experiments on a dog which had been subjected to an operation on the upper part of the abdomen under ether anaesthesia they were able to cause immediate postoperative massive atelectasis by injecting into the right main bronchus the secretion aspirated from the bronchus of a human being suffering from the condition. In the dog the atelectasis involved the entire right lung.

The onset of atelectasis is sudden with a sensation of pain or tightness in the chest, dyspnoea or tachypnoea, a sudden increase in the temperature, pulse rate and respiration, cough with or without expectoration, profuse sweating, cyanosis, displacement of the heart toward the affected side and asymmetry of the chest, the affected side being relatively contracted and the sound side expanded.

Dullness is found directly over the collapsed lung and the thoracic space unoccupied by the collapsed lung is hyperresonant and may be tympanitic. In some cases vocal fremitus and breath sounds are diminished over the collapsed lung. In others these signs are increased and the breath sounds are tubular or amphoric in character and bronchophony and pectoriloquy are also extremely well marked. It is suggested that the difference in signs is dependent upon the patency of the bronchi, the greater the patency the greater being the increase in the breath sounds. In general the type of atelectasis in which the bronchi are not patent represents the earlier stage of the condition.

X-ray examination is of importance to confirm the diagnosis. The heart, trachea and bronchi will be found displaced toward the affected side. In cases of massive atelectasis the thoracic spine is curved laterally with its concavity toward the affected side and the diaphragm on this side is elevated. The

lung on the affected side shows a localized or general increase in density while on the sound side there is a very marked decrease in density due to compensatory emphysema.

The treatment suggested for the massive types of atelectasis is bronchoscopy under cocaine local anaesthesia combined with a hypodermic injection of morphine. General anaesthesia is contra-indicated. By means of bronchoscopy the bronchus or bronchi plugged with secretion can be located and the secretion removed by aspiration. As a rule this procedure must be repeated as the atelectasis recurs probably because of the impossibility of aspirating the secretion from all of the smaller bronchi. When the cough becomes productive aspiration is no longer necessary.

The prognosis is usually very good. This is true even in the massive type provided the condition is unilateral.

FRED W. SOLLEY, M.D.

Rist E and Soulas A. *The Technique of Bronchiography with Iodized Oil*. A Case of Unrecognized Bronchiectasis. (*R marques su la technique de la bronchographie lipodol à propos d'un cas de bronchiectase méconnue*). *Bull et m. S. Méd. d. l. p. d. Par.* 927 li 64.

The case reported by the authors was that of a man twenty-three years of age who developed bilateral bronchopneumonia two days after an abdominal operation and since then had expectorated about half a liter of purulent foetid material a day. Artificial pneumothorax on the left side caused no improvement. Roentgenographic examinations made by several roentgenologists after the intrabronchial injection of iodized oil failed to reveal dilatation of the bronchi but the authors looking for bronchiectases especially in the paravertebral space and the retrocardiac triangle noted ampullar postero-inferior bronchial ectasis which on the right side resembled grapes and on the left side were more cylindrical.

Rist and Soulas attribute their success in the examination to their technique which is as follows.

After cocaineization of the larynx and trachea a simple transglottic and tracheobronchial injection of stovain oil (5 to 10 per cent) is given. The intratracheal injection is administered very slowly with a 15 c.cm. syringe first on the left side and then on the right side, one syringe-full being used for each side. The patient is seated on a table and as soon as the injection is finished he is placed in lateral decubitus for three or four minutes. The head and thorax are held by the assistant beyond the edge of the table so that the hemithorax to be injected will not be compressed and there will be no interference with thoracic respiration. The injection including

the penetration time takes from six to eight minutes. After its completion the patient is placed behind the screen so that an idea of the larger bronchial ramifications may be obtained. A quarter of an hour after the injection the lower portions may be seen and this is the best time to take the roentgenograms. The roentgenograms are taken—on front view and one in the right or left anterior oblique position. The picture taken at an angle is generally the one most clearly showing the juxta vertebral spaces. Illustration of the cardiac space in which bronchovascular casts are most frequently seen.

SERGEANT D. J. USSI, this report said that the patient should be kept to take deep inspirations during the injection so that the iodized oil will be aspirated into the most ramifications of the bronchi. He should be asked also to cough. His effort to prevent coughing may be aided by a previous injection of an anæsthetic solution. Sergeant thinks the roentgenograms should be taken immediately after the injection because following the aspiration the patient recommends the image is then clearer and waiting increases the risk of coughing. As only a small quantity of iodized oil can be injected one cannot be sure that the bronchovascular casts are the only ones. Hence pharyngotomy or other surgical operation performed for bronchovascular casts of one side may be without result if the other large bronchovascular casts are the other side. AN A. L. TAC

CUTLER E. C. The Etiology of Pott's abscess of the Lung. *Of St. M. J.* 98 9

The author believes that the etiological factors of pott's abscess of the lung are to be found in the operation of the

Pott's abscess of the lung constitutes one third of all pulmonary abscesses. Statistics show that a high percentage of pulmonary abscesses follow tonsillotomy but it must be remembered that tonsillectomy is one of the most frequent operations performed and constitutes one half of all operations performed with a sharp or potentially septic field. Pulmonary abscess follows tonsillectomy no more frequently than it follows other operations in an infected field.

In an experiment on dog performed by the author infected vessels of the neck were set free in the jugular vein. The majority of these reached the left carotid. This experiment showed that an infected embolus will usually produce an abscess in the carotid of the lungs.

In another experiment on dog simple infected clots were fed in the jugular vein but as the animals had no immunity to the new and unusual organism the usually produced a diffuse pneumonitis. The animal was then vaccinated with the organism to be used. An abscess resulted when the immunity established was not sufficient to overcome the infection at once.

As the experiments described did not exactly resemble the occurrence of abscess in man the clot

being formed *in vivo* an experiment was carried out in which an abscess was created about the jugular vein and after the elapse of a sufficient interval for the production of antibodies the wound was entered and the vein temporarily ligated to produce stasis and then severely traumatized. In this manner the abscesses were created *in vivo* the conditions of stasis, injury and infection which are necessary for the production of thrombosis. When the stasis was relieved the clot slipped off and in a few instances an abscess was formed.

The author hopes to show by further experiments that embolism may be the cause of other postoperative pulmonary complications such as pleurisy, emphysema and a consolidation resembling pneumonia.

Although the experiments described seem to show that embolism from an operative wound can produce postoperative pulmonary abscess in man they do not prove that all cases of postoperative abscess of the lung are of embolic origin. It is possible that in certain cases the etiological factor is the aspiration of infected material. However any form of postoperative pulmonary complications may occur when the operation is performed under local anaesthesia. Moreover many pulmonary complications develop much later after operation than could be the case if they were due to aspiration and they often have the tendencies which are characteristic of embolism. If aspiration were the only cause of postoperative abscess of the lung such abscess should not occur after clean operations.

J. E. VAN KIRK-PATRICK, M.D.

ŒSOPHAGUS AND MEDIASTINUM

MORSE J. L. The Thyroid Obsession. *B. I. M. & S. J.* 98 c 547

Morse states that it has recently become the tendency not only of pediatric but also of physicians in general to attribute to the thyroid all of the disturbances of infancy and early childhood which they cannot ascribe to clefts. As the function of the thyroid is practically unknown it is easy to assume that symptoms which cannot be accounted for in any other way are due to an increase or decrease in the hypothyroid secretion of this gland. Morse is of the opinion that physicians are generally do not grasp the fact that there is a difference between the symptoms caused by an enlarged thyroid through pressure on other structures in the ante or mediastinum symptom which may be due to a continuous or intermittent increase or decrease in the hypothetical internal secretion of the thyroid and symptoms which may result from status lymphaticus of which enlargement of the thyroid is only one manifestation. There seems to be a general lack of knowledge also as to the normal size and growth of the thyroid and the size of its normal roentgen shadow.

Morse gives the average weight of the thyroid at birth and at the ages of six weeks, six months

puberty and fifty years. The size of the thymic shadow in the roentgenogram varies according to the position of the subject, the technique used for the examination and whether the roentgenogram was made during inspiration or expiration. The shadow is larger during inspiration than during expiration. Unless the patient is always in the same position and the technique is always the same and unless the roentgenograms are taken after full expiration the findings of the X-ray examination are untrustworthy. As ordinarily taken roentgenograms reveal nothing as to the thickness of the thymus and if the examination is repeated it will show that the size of the shadow varies from hour to hour. It is therefore impossible even when a perfect roentgenographic technique is employed to lay down any arbitrary rules as to the normal size of the thymus in newborn infants or older children.

The only apparent object of attempting to diminish the size of a supposedly enlarged thymus seems to be to protect the infant against sudden death from status lymphaticus. The author discusses the possible fallacies in the commonly accepted views regarding status lymphaticus and the relation of this condition to enlargement of the thymus. It seems evident from the experience of surgeons and anesthetists with whom he has discussed the subject that death from status lymphaticus as a result of anesthetization and operation is most unusual. In Morse's opinion there is no justification for the assumption that shrinkage of the thymus by roentgen ray irradiation will have any effect on status lymphaticus and it is not reasonable nor justifiable to say that a roentgenogram should be taken of every child before anesthetization or operation or that treatment with the roentgen ray should be given in every case before anesthetization or operation if the roentgenologist believes the thymic shadow to be enlarged.

EMIL C. POBITSEK, M.D.

MISCELLANEOUS

Chapman J. F. The Value of the Lateral Exposure in the Roentgen Examination of the Chest. *Radiology* 1928 x 139.

In all roentgen ray examinations of the chest made in the Department of Radiology of the Stanford Medical School the patient is first examined with the fluoroscope. A single roentgenogram is then made in the anterior position and another in the direct lateral position. This procedure has been followed for several years and increasingly more reliance has been placed on the lateral exposure.

Although lateral roentgenography leaves much to be desired as regards detail it gives information relative to gross lesions that can be obtained in no other way. The lateral roentgenogram is analyzed in relation to the anatomical structures, particular attention being paid to the topography of the various fissures.

According to the author's studies lateral exposures are of value chiefly in such conditions as abscess, interlobar collections of fluid, localized pleural effusions, bronchiectasis, pneumonia, pleural adhesions and foreign bodies. In lymphosarcoma, Hodgkin's disease and tuberculosis they proved to be of less importance than was expected.

Chapman reports a number of cases in detail with roentgenograms to show the value of X-ray examination in the lateral direction.

ADOLPH HARTUNG, M.D.

Boothby W. M. and Haines S. F. Oxygen Therapy. *J. Am. M. Ass.* 1928 c 372.

Patients were treated in oxygen chambers with increased tensions of oxygen. The therapeutic effect was best in cases of acute anoxemia evidenced by cyanosis such as occurs in pulmonary congestion and oedema, frank pneumonia and laryngeal and tracheal obstruction. In this condition the use of oxygen was frequently a life saving procedure and in most cases it greatly increased the patient's comfort.

Oxygen treatment is of value only in relieving the patient of the added load and danger of anoxemia and must be continued until the cause of the anoxemia is relieved. There is no evidence that oxygen increases resistance to infection but as it prevents the lowering of resistance its administration should be initiated at the very first sign of cyanosis.

The study reported showed that a vicious circle can be started by a mild pulmonary or bronchial infection. Such infection leads first to pulmonary congestion and oedema which interfering with the aeration of the blood cause anoxemia and cyanosis. The patient then becomes more susceptible to the infection and the consequent rapid development or extension of the pneumonic process completes the vicious circle by increasing the anoxemia.

The authors noted also that a mild bronchial or pulmonary infection accompanied by cyanosis causes a greater elevation of the temperature than infection of the same degree in which cyanosis is prevented by the administration of oxygen. The administration of oxygen frequently produces a crisis like drop in the temperature, a decrease in the pulse rate and marked clinical improvement.

SURGERY OF THE ABDOMEN

ABDOMINAL WALL AND PERITONEUM

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Torsion of the omentum may occur in the absence of hernia or other pathological condition and without previous abdominal symptoms.

There is almost always evidence of a pre-existing pedicle. This may be of congenital origin.

Obesity of the omentum is present in the majority of cases and is probably often a predisposing factor in both the formation of the pedicle and the torsion.

Hyperæmia may be the usual exciting factor in torsion but trauma or unusual physical exertion may also initiate it.

Prophylactic resection of a pedunculated omentum and the liberation of adhesions are usually advisable.

Early operative resection of the strangulated omentum should be performed.

JOHN J. MALONEY, M.D.

GASTRO-INTESTINAL TRACT

Breitkopf E. Volvulus of the Stomach (Malnutrition). *Beitr. klin. Chir.* 1917, 41, 9.

Breitkopf reports a case of idiopathic anterior volvulus of the stomach on its axis. The patient was a man forty years of age who had had periodically recurring gastric disturbances for eleven years and suddenly after a heavy midday meal suffered a very severe attack of pain. The pain was not associated with vomiting. In the hope of alleviating it the patient took in the course of two and a half hours three heaping teaspoonfuls of sodium bicarbonate. After the last dose there occurred a sudden progressively increasing distention of the abdomen accompanied by severe abdominal pain. Four hours later the patient was admitted to the hospital with cyanosis of the extremities and face and drum-like tenseness marked tympany and great distention of the abdomen. As reliable organic findings could not be obtained a tentative diagnosis of perforated ulcer of the stomach was made on the basis of the history.

At operation the interior wall of the greatly distended stomach at first suggested a cyst. On puncture a large quantity of gas was given off and the stomach became much smaller though it still contained a large amount of fluids and solids. An attempt to evacuate the gastric contents by means of the stomach tube was unsuccessful as the tube could not be passed through the cardia. Closer examination then disclosed a rotation of the corpus and fundus of the stomach to about 70 degrees the axis of the rotation being parallel with the long axis of the organ. The rotation had formed a fold which extended from the cardia in the wall of the fundus on a line parallel with the lesser curvature and exerted a valvular effect. The duodenal attachments were markedly relaxed (ptosis duodeni). In the upper part of the descending portion of the duodenum there was a serosal pannus a whitish calcareous opacity suggesting an underlying ulcer. When the stomach was partly emptied through a gastrostomy opening the volvulus was un-

twisted. The postoperative convalescence was stormy but ultimately recovery resulted.

This case was characterized by extreme gastroparesis with marked weakness of the suspensory tissue of the duodenum and apparently a paralytic ulcer. The author concludes that the cicatricial contraction of the healing ulcer produced stenosis of the pylorus with resulting gastrectasis which favored the occurrence of volvulus. The indirect factor responsible for the volvulus was the heavy meal and the direct factor the sudden formation of large quantities of gas from the sodium bicarbonate. The rotation of the stomach amounted to only about 70 degrees and was therefore slight as compared with that in other cases reported in the literature. The rotation in the upper part of the stomach (corpus and fundus) occurred anteriorly because the transverse colon prevented a posterior rotation.

The explanation of the closure of the duodenal end of the stomach must be based on hypothesis as this portion of the organ was not exposed at operation. Roentgen examination suggested a stenotic condition of the pylorus but this was not sufficiently pronounced to explain the complete closure. It is probable that the dilated stomach was forced down against the sloping internal surface of the iliac bone and that the pull of the gastrocolic ligament tilted it toward the vertebral column thereby closing the pylorus by twisting it. (PHELPS)

Choisy R. and Babianetz L. A Contribution to the Study of Volvulus of the Stomach (Contribution à l'étude du volvulus de l'estomac). *Bull. Acad. Chir.* 1917, 41, 9.

The authors describe the principal forms of volvulus of the stomach and emphasize the importance of the X-ray in the diagnosis of volvulus of the pyloric portion which is not clinically characteristic. They then report a case of volvulus of the stomach in which the diagnosis was made by roentgen examination. This case was characterized by an abdominal syndrome with intermittent pain and vomiting, intestinal stasis and pneumatosis, retention of urine and amenorrhœa. Laparotomy revealed no organic changes in the stomach or its vicinity.

Volvulus of the stomach not exceeding 180 degrees may occur without causing any striking symptoms or functional disturbance. In the absence of organic lesions of the stomach gastric volvulus may be the result of intestinal pneumatosis. Its occurrence is favored also by the retention of urine and hypermotility of the stomach.

Volvulus of the stomach which does not exceed 180 degrees may become reduced spontaneously.

Nickel A. C. and Hufferd A. R. Elective Localization of Streptococci Isolated from Cases of Peptic Ulcer. *Arch. Int. Med.* 1928, 41, 210.

A review of the literature reveals numerous cases by which ulcers of the stomach may be produced experimentally. Some investigators of these lesions believe that infection plays an important part in the

etology of peptic ulcer and that a gastritis or duodenitis preceded the ulceration

Thurston and Renslow elective localization method utilizing gastric secretases of ulcer for localization. The focus is in the teeth of the duodenum. In twenty-nine of the eighty cases the ratio of infection which harbored germs producing streptococcus capable of producing the stomach duodenum when injected intra-nasally into rabbit

Also in other cases in which the ulceration of the stomach and duodenum were found to be due to the streptococcus that produced the stomach or duodenum in rabbits and in all of the eleven cases there was a focus of infection harboring strains of streptococcus. The majority of the patients who were not indicated did not have a primary or main symptom as did those whose symptoms were at the time of the use of antitoxin sometimes of the apert value

The author states that the use of antitoxin sometimes of the apert value

Kilham and Johnson The Mechanism of Pain Production in Abdominal Visceral Disease with Special Reference to the Pains of Peptic Ulcer
Med J 4 1 9 64

Kellars remarks that as follows
The visceral afferent system is a stimulus
The visceral afferent system is a stimulus
This is a stimulus to the afferent system
The visceral afferent system is a stimulus

3. Jamieson and McKim made an important step forward in the interpretation of pain by describing its effects but he considered the general ensibility of the viscera and he failed to describe the adequate stimulus which initiates the impulses in the reflex path

4. Lander and McKim most important in emphasizing the ensibility of the parietal peritoneum but Lander states that it fails when applied to purely splanchnic pain

5. Histed and Gledhill the reflex and the truly cerebral lesion in splanchnic pain. He pointed out that the cerebral may be seen to be the adequate stimulus is employed although they may be sensitive to other factors of reference. He considered distant on the basis of adequate stimulus but failed to take into account the facts that the reflex reaction may cause no pain and that visceral pain may occur in the absence of distant on. I believe that the reaction of a hollow viscus to a peritoneal or pathological condition depends upon its physiological habits. The stomach and the renal pelvis illustrate this principle from opposite standpoint

6. The characteristics of pain in peptic ulcer are described as local stress bearing in mind upon its steady nature. It is not due to hemorrhage influences the pain

7. Current theories (Mackenzie Lennard-Jones Hurst Ryle and Carlsons) do not adequately explain the characteristics of ulcer pains

8. Somatic pain may of course arise from mechanical interference. By dragging on the parietal peritoneum prolapse of the viscera may cause pain which is really somatic

9. The parietal peritoneal case of the splenicopleuric can be brought under a common mechanism with somatic pain. Compression of the visceral fibers has been shown clinically and experimentally to be the essential common factor

10. Compression of two great varieties (1) that due to vascular and cellular congestion in the tissues and (2) that due to powerful muscular contraction

11. Pains depending upon different mechanisms have definite characteristic attributes follow naturally from the mode of production. This is a most important principle. Apart from pain due to mechanical interference with somatic tissues the congestive and the peristaltic effects to great varieties of pain

12. The steady nature of peptic ulcer pains suggest to a steady case namely congestion. Further scrutiny of this conception provides for the peculiarities of ulcer pains a satisfactory explanation hitherto impossible. Pain is therefore produced in a chronic ulcer of the stomach in the same way as in a chronic ulcer anywhere else as for example in the leg

13. Congestion requires a certain amount of rigidity in the tissues in order that compression may be brought to a stage adequate for production. Congestion in rigid tissues present in every case of chronic peptic ulcer. The essentials for pain production according to previous notions could be demonstrated in but a few of the patients

14. The alkalies have been investigated radiographically and kymographically in the healthy and the diseased subject. They have no effect on gastric peristalsis. Sodium bicarbonate causes a relaxation of the pyloroduodenal musculature

15. The psudoleucoplakia in appendicitis and gall bladder disease depend upon lymphangitis and lymphadenitis in the pyloroduodenal region

Nunn and Hill The Inflammatory and Toxic Factors in the Pathology of Gastric and Duodenal Ulcer with Particular Reference to the Theory of Protein Denaturation (Dietrich and Ziff) 1964
Ziff and McKim 1964
Nunn and Hill 1964

Following a review of the literature on the infectious and inflammatory genesis of gastric and duodenal ulcer and an exhaustive consideration of Pfeiffer's theories as to the nature of fermentation by the products of protein decomposition the authors attempt to throw some light on the problem of the rôle played by inflammation on the associated proteolytic decomposition in the production of ulcer

He states that every laboratory test in the gastro-intestinal tract as well as every effort is to

be regarded as infected. Infection whatever the infecting organism produces a local inflammation of the wall of the stomach. Certain clinical observations indicate that the inflammatory phenomena are not to be considered solely as secondary processes in some instances an ulcer may result from them.

Besides bacterial toxins introduced from without and toxins formed within the body may lead to gastritis. Among the causes of auto intoxication the author regards protein decomposition products and histamin as of particular importance. In fact he believes that intoxication due to the products of protein decomposition is the basis of all theories of ulcer formation. That the products of protein decomposition may be excreted from the stomach and duodenum seems to be established by various pathological processes such as parenteral dyspepsia in children following infections and ulcers resulting from burns uræmic poisoning etc.

Besides the local production of protein decomposition products in the inflammatory foci a part is played also by inundation of the organism by the products of intermediary metabolism as a result of abnormal resorption (epilepsy). The author suggests that many gastroduodenal ulcers may be due to such chronic gastro intestinal auto intoxication of the organism. In support of this theory he cites the constipation so frequently associated with ulcer which is regarded as the primary trouble and the difference in the frequency of ulcer with different types of diet.

The intoxication caused by protein decomposition products is of such a character that it fits in with all theories regarding the genesis of ulcer. The author sees in the protein body theory the first beginnings of a therapy which perhaps may seriously threaten the status of surgical treatment. Such a stimulative therapy is to be seen in the tissue breakdown incident to the peritonitis following the perforation of an ulcer which is responsible for the permanent healing of a large number of ulcers.

In experiments carried out on dogs an attempt was made to produce similar conditions by the peritoneal injection of from 20 to 30 c cm. of physiological salt solution containing 1 or 2 c cm. of oil of turpentine. These injections caused a considerable thickening of the peritoneum and a moderate amount of peritoneal exudate. It was found that experimentally produced ulcers healed rapidly when such injections were given. Experiments on dogs undertaken to substantiate Stuber's findings yielded negative results. In experiments on rabbits in which subdiaphragmatic section of the vagus was done and 1 cc. of injections of formalin were given an ulcer was usually produced. L. CHL (L)

Nystrom G. Peptic Ulcer After Extensive Resection of the Stomach (Ul. pepticum nach ausgedehnter Magenresektion). *Zellbl f. Chir.* 1927 1 2203

Even extensive resection of the stomach is not a certain protection against peptic ulcer of the

jejunum and may not always result in a decrease in the secretion of hydrochloric acid and pepsin. The author reports a case from the Upsala clinic in which five months and thirteen months after a Billroth II operation for ulcer of the duodenum it was necessary to operate for jejunal ulcer. Even after the third operation a temporary acidity was followed by a hydrochloric acid value of 24 and a total acidity value of 56.

Up to the present time there have been reported in the literature sixty two cases of peptic ulcer following resection of the stomach. More data must be collected with regard to the chemistry of the stomach after resection and especially in peptic ulcer of the jejunum following resection since our theories concerning this question require proof. Wanke reported from the Kiel clinic seventy cases treated by a Billroth II resection without a recurrence or the development of a jejunal ulcer. In more than 300 cases in which a Billroth I resection was performed from two to fifteen years ago there were two recurrences—an ulcer tumor in the anastomosis and a callous ulcer in the duodenum. In both of the cases with recurrence the resection had not been extensive enough and the acidity was high. However the recurrent ulcer and the jejunal ulcer were not the only evidences of failure in the ulcer treatment; not all of the lesions in the other cases were healed.

Operation can bring about a cure only when it is performed on the basis of the proper indications. Resection of the pylorus and antrum is indicated for chronic callous penetrating ulcers and for cases of ulcer of the jejunum in which gastro enterostomy has failed but should not be done for simple ulcer or ulcer sickness without ulcer. It is indicated also for cases of chronic callous ulcer in which a spontaneous cure seems no longer possible. It does not matter much whether the method used is the Billroth I or II procedure.

Bruett examined the ulcer material of the Eppendorf clinic to see whether it was true as was formerly believed that jejunal ulcer occurs just as frequently after the Billroth II operation as after gastro enterostomy. Among 500 ulcer operations performed in the last six years there were 400 resections by the Billroth II method (Reichel Polya) and 12 by the Billroth I method. In the same period 15 cases of jejunal ulcer were operated upon nearly all of them according to the Billroth II method. In 14 cases a gastro enterostomy had been performed previously. A Billroth II operation had been done previously in only 1 case and in this instance was performed for a jejunal ulcer which developed after a gastro enterostomy. It was noteworthy that in spite of the absence of free hydrochloric acid in fractional specimens several new peptic ulcers of the jejunum had formed.

It therefore appears that as indicated also in a case reported by Haberer free hydrochloric acid is not absolutely necessary for the formation of jejunal ulcer. In the 12 cases in which the Billroth

Operation was done the e were 2 recurrences one at the suture line and the oth r in the duodenum a y from th suture line Th refore the good results bta n l t other linics th th Bllroth I J rat o ere t onfirm d Th eviden ed al o by 2 t cu nes of ulcer n cases n h l a Bll th I op ation s prf mel at anoth linc Tr (Z)

S c A C J jun l nd G st ojejun l Ulce
U l J l g t v j al) P g d l
l M l i q x 363 4

Th i thr h t t d f t three c s of po t
f t j ju l ul nd r p ts tv tv one of
t f m d tail th ill st tions H ble e that
high ka t c h t n of the cau e pred spos ng
t j ju l ul but e er mo th in a p r dis
ing u H i f th p ion th t in a e of lcer
th r i al av n l c i a th u s He h s f e quently
not agot n inc e ful but d not rega d
it a v mp tant H doe not belie e that
the k n l f sutu us l of as much importance
a hid b e cl imed by som s rge since e nd
ary ul r h l veloped ft the u of catgut
v ll after th us f ilk sutures Nor do s h
b li that the type of gastro ent ro t my makes
much diffe ne S n l a v l c r c u r s th about
q l f que y afte into o and poster gast o
ter tomy

H f d that th a e age time bet e n the gast o
ent ro t m and the d elopm nt of th jejunal
ul r i th e or f u r m n th s J j nal ulcer should
be spect i wh e r patient retu n after a
ga to nte tomy complaining of recu nce f
lus f m r symptoms On of the ch f s y m p t o m s
j j u n l u l c e p a part cularly pain on pr ssu
to th l f t of the s t f the or g u n l e Sp n
taneou pain d l p later T v other y m p t o m s
f im po tanc e p e i tence or recurrence of th
g t r i c d i t y i o m t g

The b t p o p h y l a c t c t e a t m e n t s u p p o s s i o n of
the s c t o r y l u c t i o n f t e a n t r u m of the pyloru
as compl telv p o ble at the r g i n a l o p e r a t o n
In c of g t r d d n a l u l c e r g t r e c t o m y
h o u l d be p e f r m e l i n s t e a d f g a s t r o e n t e r o s t o m y
f p o b l e In 8 o c a s e s v h c h the author p
f o r m e d a c t t h e r e w a s n o t a s i n g l i n s t n of
j e j u n a l u l r G t r e c t m y i s n d e a t d a l s f t e
e c o n d a v u l c e Th d e t a l f t h p e a t o a r e
s h n i n l l u s t r n s It i s i m p o r t a n t t o m e m b e r
t h t g t r o e n t e r o s t o m y d o e s n o t i m m e d i a t l y
e f f e c t a c u r e b u t m e l y a o r t h e h e l n of the
l e i o n a n d s h u l d t h r e f e b e f o l l o w e d b y c a r e f u l
r e g u l a t n of the d i t a n d m a s u r e t o r e d c e the
g a s t r i c a c i d t y A v G M M D

Lah v F H nd J d n S M G t ojejun l
Ulc and Gast ojejunolc Fl t u l e i
S g 9 8 l x 3

The authors state that the maj itv of the ulcers
d elopng after gast o ent ro tomy are gast o
jejunal ulcers and not recurrences of h e original

les on Gastroj junal ulcers are more common than
as f r m e l y assumed Because of their frequent
and serious complications their early discovery is of
great importance W h n m e d c a l t r e a t m e n t f a i l s
to g a e r l f a n i l l o r t h e a c i d i t y p r o m p t a n d c o m
p l e t e r a d i c a t i o n of the l i n i s i n d i c a t e d
C L R S M D

H r d i t y R H M On t i e T t m e n t f G a s t r i c
U l c e C d M f i J g s 4

In a s s of g a s t r i c u l r the pat e n t s h a b i t s a n d
s o c i a l t t u s a n d t h e h o m i c i t y of the l o n h a v e a n
i m p o r t a n t i n f l u e n c e o n t h e r e s u l t s of t r e a t m e n t
Th r e c r l of c e s of u n d o u b t d g a s t r i c u l c e
t r e a t d a t t h R o v l v i t a h o s p i t a l M n t r e a d
d n g t h l a t i y e a r s h a t t h e m a j o r i t y of
t h e a r e t h e r c u d o r b n e f i t t e d b y m e d i c a l
t r a t m e n t H o v e r m e d i c a l t a t m e n t c a n b e
o n l y s y m p t o m a t i c e d n o t k o v t h e c a u s e of
g a s t u l r

Most u r g e o n s a n d s o m e i n t r n t s a g e e t h a t
c e t a i n c h r o n i c u l e r s a n l t h o s e i t h c o m p l i c a t i o n s
m u t b e t r e t l s u g a l l y I a s e i s o f 500 m e d c a l l y
t r e a t e d c a s of g t r i a n d d u o d e n a l u l c e r h i c h
r p o r t e d b y E g g l s t o r e l i e f o v e r a p e r i o d of
e a r e s u l t d 70 p e r c e n t I n o t h e r s e r i e s of
e s t r e t l m d l l v a u r e w a s o b t a i n e d i n
f r m 40 t 58 p c t i n t h m d e r t h e c o n d i
t i o n a s i m p r o v d o r a g g r a v a t e d T h m o r t a l i t y of
m e d c a l t a t m e n t r a n g e f r o m 5 t o 6 p e r c e n t

S t a t i s t i c of g o p f c a s e s t r e a t e d s u g e l l y
h o w t h a t i r e m a y b e p c t d n f r o m 80 t o 90
p r c e n t of c a s s of d o d e n a l u l c e r a n d i n f o m 50 t
80 p e r c e n t of c a s e s of g t r i c u l c e r T h m o r t a l i
t a n g e s f r o m t o 5 p r c e n t l p e n d i n g p o n t h e
r g e n P s t o p t i v e j j u n l u l c e o c c u r s i n o r
p e r c e n t f t h e a s e s t h e b e i g u u l l v c h o n i c
a s e s d t h o s h c h h a e r e s i t d m d c i m a n
g m t

The p r o p r t r a t m e n t f g a s t r i c a n d d u o d e n a l
l c e h n d i c p p e d b y d i f f l t y n t h e a r l y d
a g n i s of t h e l e i o n a n l c e d i n g t o m n y a u t h o r
i t e b y c o n s t i t u t i o n o n l y o n f h c h t h e
u l r i s b u t l o c l m a n i f a t n T h r e s t i l l
d i f f e r e n c e of o p i n i o n a s t o w h e t h e r g a s t r i c u l c e
b c o m e m l g a n t

The a u t h o r b e l i e v e s t h t a c u t e u l c e s r e q u i r e
m e d c a l t e m e t a n d u l c e t h c o m p l i c a t i o n s
e q u i r e u r g a l c t e m e n t I n t h o t h e s e t h e
m t h l m y b e u s e d a n d t h c e i s f t e n d e t
m n e l b y t h e p a t i e n t s s a l o r t n a n c i a l c o n d i

W i t t J I t r M D

T j l o F B The A m b u l t y T a t m n t of P p
t i U l e r C l f G l l i f d 9 8 48

The a t h r s t r s e s t h e f a c t t h t m a n y p e p t i c
u l c e r s c a n b e c u r d b y a m b u l a t o r y t e m e n t
I n t a k g t h s t o v of a c a s of p e p t i c u l c e r h e
i n q u i r e s e g d i n g t h e p a t n t s h b i t s of e a t i n g
t h e r of h s f o o d t h e u of t o b a c c o h s
e x e t w h a t h e t e r m s t h p s y c h i c l o a d I n
t h e m i n a t i o n h e m a k e s a s e a r c h f o r f o c i

of infection in the teeth and tonsils. He tries to control the psychic load by urging the patient to manage his business, domestic and social affairs in such a way that he will not be incited to overdraw physically, mentally or financially.

The most important factor in the relief of ulcer pain is the frequent feeding of meals containing fat. Experimental evidence has shown that fat containing meals depress the muscular activity of the stomach. By anticipating the pain and feeding at the opportune time it is usually possible to keep the patient free from pain. The author gives alkali only during the first few days. He prefers to give it in the form of calcium carbonate as all of this salt that is not attacked by the acid passes through the bowel without change so that excessive absorption is avoided.

While Taylor believes that there is some advantage in hospital treatment, he has found that when a patient is released from the hospital he has a tendency to work harder to make up for lost time thereby favoring a recurrence of the ulceration. If the patient will accept the program laid out for him and follow it for many months after he has become symptom free, he will live in comfort and surgery may often be forestalled.

In conclusion the author emphasizes that even when a patient treated for ulcer remains free from symptoms for months or years we cannot know that he is cured. Therefore the regulation of his life and habits must be continued indefinitely. If operation becomes necessary it should be accepted as one phase of the treatment.

POSCOE P. GRAHAM, M.D.

Maclean, H. Jones, I. and Fildes, G. The Cure of Gastric and Duodenal Ulcers by Intensive Alkaline Treatment. *Lancet* 1928, ccxv, 14.

The authors state that the normal concentration of hydrochloric acid found by the usual test meal is deceptive as the acid continues to be secreted after digestion has been completed and the meal has left the stomach. As hypersecretion in the absence of food in the stomach tends to prevent the healing of gastric and duodenal ulcers, the authors advocate intensive alkaline therapy for such lesions. They give a mixture consisting of one part of sodium bicarbonate, two parts of magnesium carbonate and two parts of bismuth oxy carbonate. The magnesium may be decreased in cases with diarrhoea and the bismuth decreased in cases with constipation. In order that the powder will have the maximum effect the patient is kept on a liquid diet, preferably of milk for at least a week. A teaspoonful of the powder is given every two hours during the day and a double dose at night just before the patient retires. The duration of the treatment is approximately twelve weeks.

In the authors' opinion the action of the alkalis is essentially that of neutralization and alkalosis does not result. The effects of the treatment are harmful only in patients with advanced pathological conditions of the kidneys.

Cases in which the treatment described was followed by complete subsidence of the symptoms and disappearance of the signs of ulcer in the roentgen picture are reported. RODRICK V. CRACE, M.D.

Pamperl, R. and Schwarz, F. Experiences in the Surgical Treatment of Gastric and Duodenal Ulcer (Erfahrungen mit der operativen Behandlung des Magens und Duodenalgeschwüres). *Beitr. klin. Chir.* 1917, cxi, 259, 311.

The authors report a follow up study made of 637 cases of gastric and duodenal ulcer treated surgically in the period from 1912 to 1933 to determine whether and when palliative or radical operations should be attempted. Cases of embarrassment gastroenterostomy (an escape from an embarrassing or perplexing situation) have not been included in the report because the presence of an ulcer was not proved.

Among the absolute indications for operation were included stenosis, penetration and perforation and certain cases of hæmorrhage. Operation was done also for special social reasons, but many of the patients had already been subjected to several courses of medical treatment. In the presence of occult hæmorrhages operation is indicated by pain, vomiting and emaciation even when the positive roentgenographic findings are not pronounced.

First among the operations in the cases reviewed was gastroenterostomy. This was usually combined with exclusion of the pylorus as a rule according to the technique of Wilms, but also according to the technique of von Eiselsberg. Postoperative hæmorrhages from the suture were twice as frequent as those from the ulcer and are therefore to be attributed mainly to the technique. Two cases of surgically incurable ulcer are reported in detail.

In a series of 398 cases, 399 gastroenterostomies were done. The patients were between the second and eighth decades of life. Three hundred and four of them were males. Two hundred and twenty-eight of the ulcers were in the stomach. Of these 139 were in the pylorus, 40 were prepyloric and 49 were at a distance from the pylorus. One hundred and seventy ulcers were in the duodenum.

In 214 cases the operation consisted of gastroenterostomy alone and in 183 of gastroenterostomy with exclusion of the pylorus (the Wilms procedure in 181 and the von Eiselsberg procedure in 2). Exclusion of the pylorus was done in 124 cases of duodenal ulcer and 61 cases of vestibular ulcer. A peptic ulcer of the jejunum developed in only 2 instances.

In 244 of the cases treated by gastroenterostomy there were no complications. In the 154 others hæmorrhage occurred in 8, penetration in 48, perforation in 43 and stenosis in 67. In 3 cases a second operation was necessary because of postoperative intestinal disturbances.

In recording the results of gastroenterostomy the author gives first the percentages including the cases of patients who could not be traced (157 or 27 per cent of the total number) and then the corresponding percentage calculated without the latter.

tive results Woolsey does not favor sleeve resection. The ideal operation he believes is partial gastrectomy.

In Woolsey's experience gastrojejunal ulcer has occurred in from 2 to 3 per cent of cases. The absence of such lesions in the cases treated at the University of California Clinic during the last five years is attributed to the use of an atraumatic technique and absorbable sutures and the careful adaptation of the operative treatment to the requirements of the particular lesion. Woolsey treats gastrojejunal ulcer by partial gastrectomy.

ROSCOE R. GRAHAM M.D.

Hartmann H. The Late Results of Gastro Enterostomy in Cases of Ulcer of the Lesser Curvature of the Stomach (Résultats éloignés de la gastroentérostomie dans l'ulcère de la petite courbure de l'estomac) *Bull et mémo Soc. d'Chir.* 1927 lxx 1097.

At the Surgical Congress of 1900 Duval and Delageniere stated that in cases of ulcer of the lesser curvature of the stomach gastro enterostomy should be abandoned in favor of excision of the ulcer. This view was shared by all who took part in the discussion. Hartmann agreed as he had practically given up gastro enterostomy for this type of lesion since 1907. However on studying the results in fifty cases in which he operated from one to twenty-two years ago he found that the late results of gastro enterostomy for ulcer of the lesser curvature were far better than he had anticipated even in cases without delayed emptying time.

Two of the patients had had some trouble during the first few months after the operation but since then had remained well for eight and twenty-two years respectively. Twenty-five were entirely free from symptoms after the operation. Accordingly twenty-seven of the fifty patients were clinically cured after a shorter or longer period. Six continued to have digestive disturbances but these were milder. Of eight who developed secondary troubles after they were believed to be cured four responded well to brief treatment. Two had late hemorrhages but felt perfectly well. A second operation was done in only two cases. In one of these there was partial intestinal obstruction from an omental band a condition which was relieved when the band was severed. X-ray examination later revealed hour glass deformity of the stomach. In the other case the second operation revealed a cicatricial adhesion between the lesser curvature of the stomach and the liver without active ulceration. Gastropylorotomy was followed by recovery. Two patients later presented evidences of cancer. In the case of one who died fifteen months after the operation autopsy disclosed carcinoma of the stomach and liver. In the other case the clinical signs of cancer developed at the end of five years.

Hartmann concludes that contrary to prevailing opinion the results of gastro enterostomy in cases of ulcer of the lesser curvature of the stomach are

very satisfactory and that the operation has fallen into disrepute merely because it has often been performed in the absence of the proper indications or with a poor technique. LEO M. ZIMMERMAN M.D.

Reischauer. Three Fatal Cases of Dysenteric Enteritis Directly Secondary to Gastro Enterostomy or Extensive Gastric Resection for Ulcer of the Stomach (Drei Fälle von letal verlaufener ruhrartiger Enteritis im unmittelbaren Anschluss an Gastroenterostomie bez. ausgedehnte Magenresektion gegen Ulcus ventriculi) *Zentralbl. f. Chir.* 1927 li 2724.

In one of the cases reported by the author the necrotic inflammation was limited to the lower ileum and there was no involvement of the colon or the upper part of the small intestine. In all of the cases reported in the literature colitis was present. As compared with the prognostically very unfavorable and rare postoperative enteritis the much more frequent dyspepsia which develops later is of less importance. In the latter condition there are usually no definite findings in the intestine.

In the discussion of Reischauer's cases LEHMANN emphasized that it is essential to differentiate between the hemorrhagic diarrhoea which begins on the first day after operation and the non hemorrhagic dyspepsia which first develops several days after the operation. The latter is dependent upon the changed bacterial flora and gastric chemistry. Errors in diet are also a factor. Therefore hydrochloric acid should be administered soon after the gastric operation. The bloody mucous dysenteric conditions have not yet been explained. They occur also after gynecological operations and operations for brain tumor. Reflex nervous conditions may perhaps be a factor. The colitis with an unfavorable prognosis occurs only in weakened patients.

GOEBEL described the macroscopic and microscopic appearance of a gastric sarcoma. The condition had been diagnosed clinically as a perforated ulcer. The symptoms of perforation were due apparently to the rupture of the tumor into the lumen of the stomach at the site of a polypoid process extending through the gastric mucosa or to entrance of the gastric contents into the cavity made by the perforation. The latter would account for the fever and the adhesion of the tumor to the anterior abdominal wall. The adhesion caused muscular rigidity and pain on pressure in the epigastrium. Because of the digestive action of the gastric enzymes such an invasion of a stomach tumor by gastric contents may not be rare.

The structure of the tumor suggested the relatively rare angiosarcoma of the stomach. HENDEL (Z).

Thalheimer M. Degastro enterostomization (De la dégastro entérostomisation) *J. de chir.* 1927 xxx 385.

The term degastro enterostomization is used by the author for the operative closure of a gastro enterostomy opening. The procedure is indicated in

dead bacteria and intestinal secretions. The bulk of a stool depends largely upon the amount of cellulose contained in the food.

Cannon found that proteins have the slowest fats the next slowest and carbohydrates the quickest passage through the gastro intestinal tract.

Heile noticed that milk produces large amounts of residue and lean meat and rice leave very little residue.

In an experiment on young healthy men Rubner found that meats eggs rice white bread noodles and macaroni are most completely digested while milk cheese fats and potatoes are less well digested.

The low residue diet given at St. Mary's Hospital Rochester Minnesota consists of strained fruit juices broth tea coffee sugar candy made of sugar alone and gelatin made with strained fruit juices. When such a diet is given there may be no bowel movement for as long as eight days.

The authors carried out experiments on dogs which had been subjected to colon resection with and to end anastomosis of the ileum to the rectum. The details of the feeding and the collection of the specimens are given.

Protein foods such as meat liver gelatin and concentrated broth produced a stool resembling the fasting specimen.

Carbohydrates—rice bread banana apple and sugar—gave a somewhat more bulky stool which was odorless and of a golden color. When sucrose dextrose and lactose were added to the food the stool contained reducing substances. Fatty foods such as lard and butter produced watery and soapy stools. These stools did not contain any more bile than the others.

The rate of passage of the stools was also studied. Fats passed through the intestinal tract so quickly that in many cases they were not affected by the digestive juices. Meat had the slowest passage through the digestive tract. The rate at which the carbohydrates passed was intermediate between that of fats and that of meats except in the case of rice which had a rate even slower than that of meat. Liquids increased the bulk of the stool.

When sugars such as lactose dextrose and karo were fed the appearance time at the rectum ranged from fifteen to thirty minutes. In the case of lactose and dextrose nothing was obtained after four and a half hours but in the case of karo the bulk of the stool was obtained in from four to six hours. In the case of whole milk the appearance time was thirty minutes and the bulk of the stool was passed in three hours. No difference was noted when the milk was boiled.

Swiss cheese appeared in thirty minutes. Its progress was rapid and it produced enormous amount of fluid residue even after five and a half hours the fecal output was large. Cottage cheese acted in much the same way as meat its progress was slow and the curve of its excretion was flat.

The addition of milk to other foods did not have a marked influence upon digestion. In some cases it slightly increased the rate and considerably in-

creased the bulk of the stool. Any interference with digestion seemed to be due to the influence of the casein or lactose.

The foods producing the least residue were gelatin sucrose dextrose karo concentrated broths hard boiled eggs meat liver rice farina and cottage cheese. Those producing the largest amount of residue were fruits potatoes lard butter Swiss cheese soft boiled eggs raw egg albumen milk and lactose. The largest amount of dry residue was produced by raw egg albumen and the largest amount of moist residue by bananas. In some cases bananas produced a stool larger than the original meal.

The authors conclude that milk should not be given when a low residue diet is desired.

WILFRID I. GRAHAM, M.D.

Navarro. Three Cases of Duodenal Compression. (Sintesis de compresión duodenal). *Bull. I m. Soc. n. d. chir. g. lin.* 323

In the first case of duodenal compression reported by Navarro there was a history of dyspepsia over a period of years which finally ended in gastric stasis with vomiting. When the patient was examined by the author a mass felt in the pyloric region was thought to be either an ulcer or a carcinoma. At operation this was found to be the inflamed head of the pancreas. The peritoneum over the gland was split and the head of the pancreas freed. The operation was followed by considerable restlessness and vomiting but the patient recovered and twenty one years afterward had no return of symptoms. Navarro attributes the stormy postoperative course to operative trauma to the celiac plexus. The fact that the inflammatory mass compressed only the duodenum leaving the bile ducts free he explains by the difference in the relations of the two embryologicalanlagen of the pancreas the posterior lies in relation to the common duct and the anterior in relation to the duodenum.

In the second case reported the obstruction was caused by tuberculous glands among the mesenteric vessels. At a previous operation tuberculous peritonitis had been found. At a second operation the glands were removed. Two years later symptoms of duodenal obstruction again developed and at a third operation a tuberculous gland was found at the same location. Navarro is opposed to gastroenterostomy and duodenojejunostomy in the cases he prefers simple removal of the glands.

In the third case reported the condition was due to the traction of a floating kidney on the peritoneum over the duodenum. A nephropexy was done through a second incision in the lumbar region. Since the operation there has been no return of symptoms.

MICHAEL I. MASON, M.D.

Ellason E. L. Rupture of the Bowel at the Duodenojejunal Junction. *J. N. S. g.* 1918, 1: 13

The patient whose case is reported in this article was a man twenty four years of age who had been

struck in the abdomen by a plank thrown from a revolving saw. The accident caused loss of consciousness and severe abdominal pain and death.

When the patient was admitted to the hospital fifteen hours later, his temperature was 101° F. The patient was unconscious. The abdomen was rigid and tender. The patient died after a few hours. The autopsy showed a perforated ulcer of the stomach.

The patient was admitted to the hospital fifteen hours later, his temperature was 101° F. The patient was unconscious. The abdomen was rigid and tender. The patient died after a few hours. The autopsy showed a perforated ulcer of the stomach.

H. R. W. F. M. D.

G. u. d. H. Perf. t. on. f. th. D. od. num. Ule. o. Tr. umat. f. Cen. al. ed. Pe. t. n. t. M. kul. c. D. ain. ge. s. th. Only. T. e. r. m. nt. R. co. y. d. i. f. t. d. d. i. m. le. u. ut. m. t. i. P. t. i. g. n. l. e. d. k. M. k. l. m. m. l. t. t. m. t. gué. s. b. h. t. S. t. d. i. o. l.

Gaudin, post-operative, had a high fever and was in a very bad condition. The abdomen was rigid and tender. The patient died after a few hours. The autopsy showed a perforated ulcer of the stomach.

gauze wick placed in the cul de sac and the abdomen closed with metal wire.

Drainage was profuse and the skin became extremely irritated and ulcerated. On the sixth day the suture gave way, permitting the abdominal wound to gape widely. The patient survived an attack of bronchopneumonia and thereafter his condition remained good. The drainage ceased one month after the operation.

The patient is unable to state whether the perforation was due to a slight traumatism or to an ulcer with only mild symptoms but because of the absence of a history of hemorrhage he believes it had an infectious origin. L. O. M. Z. M. S. V. M. D.

Goebel, H. u. f. the Affluent Loop After Rectum of the Stomach. Duodenal Ulcer and Megacolon. (Il. d. f. h. d. S. h. l. g. ch. M. g. k. t. g. U. l. d. od. d. M. g. d. d. m. l. Z. t. R. f. C. l. 9. 7. l. 7. 2.)

The author reports the case of a fifty-year-old man with megacolon and recurrent symptoms of ulcer. The patient was operated on by Braun and Kohn. The patient died after the operation. The autopsy showed a perforated ulcer of the stomach.

At autopsy, after the loop of jejunum below the Braun anastomosis was found to be markedly inflamed. At the site of the anastomosis the loop of jejunum was found to be the cause of the megacolon. The pull of the twisted loop of jejunum was found to be the cause of the megacolon.

The duodenum had a markedly dilated and thickened wall of jejunum which filled with a large quantity of dark fluid. The jejunum was partly red and partly bluish (necrotic). The suture had been found to be coming loose.

The condition was therefore a local lesion of the jejunal jejunum to the isthmus of the jejunum. The test ne at the site of the Braun anastomosis. The jejunum was explained by the megacolon. The large duodenum was found to be the cause of the megacolon. The jejunum was found to be the cause of the megacolon.

The complete absence of local distention of the jejunum was found to be the cause of the megacolon. The jejunum was found to be the cause of the megacolon.

MELCHIOR stated that he had obtained good results from duodenostomy in a case of vicarious

KOLACZEK reported a case of intestinal obstruction nine days after a gastro enterostomy in which the picture of acute gastric ileus quickly developed. At a second laparotomy performed on the tenth day, a Witzel fistula was formed on the anterior wall of the stomach and a tube was introduced through this and the gastro enterostomy opening into the efferent loop of jejunum. The vomiting then ceased and feeding was possible. Following removal of the tube at the end of two weeks there were no further disturbances of intestinal function. HFMEL (Z)

Paulson M. Chronic Ulcerative Colitis with Reference to a Bacterial Etiology. Experimental Studies. *Irel Int Med* 1928 21: 75

Paulson studied fourteen cases of chronic ulcerative colitis with reference to a bacterial etiology. The methods of study are described in detail.

Ten distinct types of streptococci were isolated from the base of the ulcer or from hyperemic tissue in the rectum. No one type was found in more than three cases.

Five of the seven types injected into the blood stream of rabbits produced a lesion. Thirty four rabbits were used. Of the thirty which came to necropsy fourteen showed lesions primarily in the colon and rectum. In twelve rabbits the lesions were associated with diarrhea without mucus or blood.

Twenty rabbits were injected with seven types of streptococci from sources other than the bowel in cases of ulcerative colitis. In twelve of the sixteen which came to necropsy there were lesions similar to those in the previous group but fewer of these lesions occurred in the colon and rectum and a greater number elsewhere in the intestinal tract. Nine rabbits showed clinical symptom of the disease without the passage of mucus or blood.

The author concludes that the lesions were the same although the organisms were from a totally different source and that there is no morphological difference in cultures from the base of ulcers in chronic ulcerative colitis and those made from cleansed sigmoides.

In a comparative study of the bacterial flora in a small group of normal persons and in persons with ulcerative colitis he found the bacillus coli, bacillus welchii and streptococcus to be more numerous in the latter group. The role played by the bacillus coli and bacillus welchii was not determined.

Bargen established the fact that the streptococcus described by him—which is not characteristic morphologically of any one type of Gram positive coccus inhabiting the normal or diseased intestinal tract—can be isolated with some degree of frequency in chronic ulcerative colitis and will produce lesions in the rectum and colon. However he has not performed control experiments to establish specificity and his vaccine therapy appears to be non specific.

The author gives Bargen credit for stimulating research in this field but on account of the similarity of the results of these experiments with two groups

of streptococci—one from ulcerative colitis and the other from other sources—he maintains that the bacterial etiology of ulcerative colitis is still undetermined.

WILFRID L. GRAHAM M.D.

Bianchi G. Adenocarcinoma of the Cecum. (*Gli adenocarcinomi del cieco*). *I n Ital di chi* 1927 1: 99

Two cases of adenocarcinoma of the cecum are reported. One was that of a man fifty four years of age and the other that of a man fifty five years old. Radical operation was performed in both and both patients are still in good health one thirteen years and the other three years after the operation. A histological description of the tumors is given.

These tumors are quite unusual. They may be either infiltrating or localized. Those of the former type infiltrate the wall of the intestine for varying distances forming a sort of cuff around it and trans forming the bowel into a rigid smooth tube. Those of the localized variety are generally irregular or nodular and attached to the intestine by a small base. These tumors are thought by some pathologists to be caused by trauma or nerve lesions but are attributed more generally to a slow process of inflammation.

Intestinal occlusion is a late sign. In the early stages the symptoms are indefinite consisting of slight intestinal irritation with irregularity in defecation and the admixture of gas with the feces. In some cases the first indications of the condition include the presence of traces of occult blood in the feces. Later the stools are mixed with pus, mucus and macroscopically visible blood and there are signs of occlusion. Attacks of more or less intense colic occur as the tumor develops. The literature reports cases of tumor of the cecum and ascending colon in which the condition was mistaken for appendicitis.

Anemia and deterioration of the general health are relatively early signs. They occurred in the author's first case before there were any indications of stenosis. Some surgeons state that periumbilical pain is a sign of the condition especially when obstruction of the ileocecal valve is threatened.

Age is not of much value in the diagnosis because the tumors may occur even in early youth. As a rule their nature can be determined only by operation and laboratory examination. The treatment is as complete removal as possible. Roentgen treatment has not proved successful.

AUDREA C. MORGAN M.D.

Wakeley C. P. G. and Gladstone R. J. The Relative Frequency of Various Positions of the Vermiform Appendix as Ascertained by an Analysis of 5 000 Cases. *I n Brit Med J* 1928 1: 8

As the position of an inflamed and gangrenous appendix and its relationship to adjoining parts frequently determine the site of an abscess it is important for the surgeon to have some knowledge of the relative frequency with which the appendix

may be found in various situations and its relation ship to the surrounding pouches and folds of peritoneum. In a study of 5000 cases the authors found the appendix in the following positions:

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	I k J McGo			M D

Lehmann H. Acute Appendicitis in the Age of 10. *Ann Surg* 1909; 49: 1-10.

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Melle J. The Value of the Tumor of the Left P. of the C. in Its Surgical Ap-
plication. *Ann Surg* 1909; 49: 1-10.

M ill e r include n h a t c l d g r m s s h o g the c o p o s t n f the l o f th c l o a n l t h e i r m a r e m e n t s Th d m o n s t r a t t h e r y l o n g s s e l a s c u l a z e s r g u l a r z n e t h b o f v h l s a t the f r e e b o r d r o f the o l n a n d t h a p e r f h i c h p r i s a o n d the m e o c l i c b o d r l h s h o t e s l s b e t w e n t h t o l n g s e l v a s c u l r i z e a t i a n g u l r z n e a b o u t c m b r o d v h i c h h a i t s b a e a t the m e s c o l n The s h a p e o f the a a s c u l a r i e d b y the l o n g v s e l e x p l a i n t h z n e o f g a n g e e s n a f t r c r t n c e l u r n t e r o r a p h s D e n u d t n o f t h c l o n w h n e c s s a t s d s n c t i n o f the m e s o c l o n a n d r e m o v a l o f a p p e n d i c e p l c e m a y n j u e the v e c l R e c t i o n o f a p p e n d i s e p l o c a e p r e t i c u l a l y d a n g e o u b e c a u s e o f the p r e n c e i n b a s e o f e a c h e p p l c t a g o f t r a h t v e s s e l

In the resection of a tumor the appendices epiploicae may be left if there is not much fat but if they are large lamelliform digitiform or confluent they must be resected. To obtain a zone for suturing it is generally sufficient to denude an area of 8 mm on each side of the line of incision that is removed one appendix epiploica. This zone should be oblique and near to the tumor at the mesenteric border than at the free border. The section should then be made obliquely and the intestine is tired edge to edge.

W. D. R. F. C. M. G. M. D.

Mecling C. C. The Symptoms of Cancer of the Rectum. *Ann Surg* 1909; 49: 1-10.

MECHLING t t that c e t l c a n c e r s c o n s t i t u t e a b o u t 4 p e r c e n t o f a l l c a n c e r a n d i n the U n i t e d S t a t s a p p o n b l f r m o e t h 3 0 0 0 d e a t h e h v e a W h n a p t e n t w h o h a s a l w a y s b n e g u l r i n h s b o l h a b t s e e k s e l f f r o m a n n u s u l a n l o b t i n a t c o n t i p a t i o n t h o r o u h r e t a l a m i n a t o n i n d i c a t e d a i n s u h c a s e s n a r l y c r o u s t u m o r o f the c t u m i s v e y l i k e l y t b d r d D r r h e a d e v e l o p m e n t f r o m t h r e t o s k f t r t h p c l f c o n s t a t i o n

ALLEN has found that the onset of cancer of the rectum is usually in the fourths of the cases and usually in the fourths. The early symptoms include nightingale, the nausea, abdominal discomfort, the cramps, the pain, the assumption of the rectum, the page of flatus, the stool, the mucoanal secretion after defecation, that the bowel movement has not been completed. A persistent diarrhea which does not lead to biliousness, anorexia, at times to stagnation of the malg.

PREFFER states that the two types of operation, the preliminary abdominal colectomy may be regarded as the standard procedure for cancer of the rectum. The acral anus has been abandoned as a satisfactory procedure. Jo. K. N. R. M. D.

Souppult R. The Operation of the Hemorrhoid. *Ann Surg* 1909; 49: 1-10.

H r t m a n n s o p e a t i o n f r c a n c e r o f the u p p e r p a r t o f the c t u m o r t h r e c t g m o i d j u n c t u r e a b l r e c t i o n o f t h t u m a n d the d i a c n t s g m e n t s f n t e s t i v t h t h r e s p o n l g m e s o c l o n a r e c t a l s t u m p b e i n g l i t i s s t a n d the l o r o f the c o l o n u d f a p e m a n t c l t m y e p a t i e n t p l c e d i n n i n c l i n e d p o s i t i o n i t h d o w n The i n c i o i s b e g u n i n the l e f t i l a c

fossa at the level of and medial to the anterior superior spine and extended to the midline just above the pubis and slightly over to the right side of the abdomen. The loops of intestine are packed aside and the tumor is explored with regard to its connections and the extent of its invasion. The mesorectum well spread out is then drawn to the left and its right leaf is incised about 1 cm. in front of its reflection onto the posterior peritoneum. The same procedure is done on the left side, the intestine being swung toward the right. Finally the peritoneum is incised at the base of the cul de sac, the two lateral incisions being joined in the mesorectum.

It is then easy to free the rectum completely—in front following the rectovaginal or rectovesical cleavage plane and behind following the bony plane of the sacrum, the entire rectorectal area being freed and the rectum together with the fatty cellular tissue, the glands and the vessels which lie in the mesorectum or its base being pushed forward.

When the position of the superior hemorrhoidal artery has been ascertained, the mesocolon is cut between forceps just to the level of the future section of the colon. By drawing the rectum upward and forward the apparently inaccessible deeper segments of the rectum are delivered with surprising facility. Two L-shaped clamps are then placed on the rectum as low down as possible, the bowel is divided between them and the cut edges are iodized. The proximal end is temporarily covered with a pad and the distal end is closed with two layers of sutures. Although there is no peritoneal investment, the danger of infection is minimal because of the absence of tension on the sutures. The pelvic cavity is peritonealized by suturing the cut edges of the peritoneum. The iliac colon is brought out through the left corner of the parietal wound, the excess removed and the wound closed. After two days the clamp is removed to permit the escape of gas and fecal matter.

Although this operation is indicated particularly for carcinoma of the lower sigmoid or upper rectum, it may be used also for lesions higher in the sigmoid in which end to end union of the colon would be too difficult.

In 7 series of thirty-one cases treated by the Hartmann operation which are reported in the literature there were two deaths, a mortality of 6.5 per cent. It is still too early to judge the late results, but the first two patients operated upon by Hartmann in 1920 were alive and without recurrence. In 1927 Soupault reports three cases of his own in which he performed the operation described.

LEO M. ZIMMERMAN, M.D.

LIVER, GALL BLADDER, PANCREAS AND SPLEEN

Moynihan, Sir B. The Gall Bladder and Its Infections. *Brit. Med. J.* 1928, 1, 1.

Infection of the gall bladder may be primary, as when a solitary cholesterol stone is formed and pro-

duces inflammatory changes by obstruction or irritation or secondary, occurring through the blood stream by the lymphatic route through the bile stream (descending from the liver or ascending from the intestine) or by direct extension from a viscus to which the gall bladder is adherent.

Secondary infection of the gall bladder through the blood stream may be arterial or venous. It occurs through the cystic arteries only in case of general septicæmia. Venous infection occurs by thrombosis from the portal veins and is very rare. Infection through the lymphatic route often occurs from the liver as the result of a preceding hepatitis. Enlargement of the cystic gland is evidence of gall bladder infection.

Infection ascending from the intestine frequently has its origin in the appendix. The association of splenic disease with liver and gall bladder disease is common. Multiple stones and mud are sometimes present throughout the ducts in the liver. In such cases the author passes several small tubes up into the liver and applies the Carrel method of intermittent irrigation for several weeks.

Of a series of eighty-one cases of gall bladder infection, the condition began in the outer coat of the organ in sixty-three. Infection may reach this coat by direct extension from the liver, by lymphatic infection from the liver, or by extension from an adjacent organ such as the appendix. When infection begins within the gall bladder, the ascending route is sometimes followed. Cholecystitis is usually only a part of an infection having its origin elsewhere.

After a consideration of the pathogenesis of calculus, the author concludes that it is useless to expect to cure cholecystitis medically if the origin of the condition is on the outer coat of the gall bladder.

If medical treatment of gall bladder infection is to be of any avail, the early symptoms must be recognized. These symptoms are discussed.

Of all forms of dyspepsia, the most common form is that dependent upon the gall bladder.

When early symptoms are noted and there is no cholecystographic shadow or the shadow is diminished in opacity or delayed in its appearance, the integrity of the gall bladder may be safely suspected and a cholecystectomy performed.

The gross appearance of the gall bladder may be little changed when the microscopic involvement justifies ablation. Cholecystectomy is indicated more frequently than it is done.

MARCLUS H. HOBART, M.D.

Toland, C. G. Gastro-Intestinal Symptoms Masking Gall Bladder Disease. *California & West Med.* 1918, 11, 42.

The author states that in the majority of cases of gastric disturbance referred to him, there is no organic lesion of the stomach. He calls attention to the atypical type of early gall bladder disease in which the symptoms are of reflex nervous origin and reports cases in which, though the clinical

symptoms were not really attributable to the gall bladder laparotomy revealed gross pathological change in the biliary tract. And the value of the roentgenogram in this case.

The author states that the gall bladder is related to the nervous system through the vagus and the sympathetic plexus.

The main purpose of the article is to emphasize the importance of investigating the biliary tract in cases of biliary tract intestinal symptoms and to illustrate the fact that symptoms of biliary tract disease may be masked by the symptoms of the intestinal tract.

W. H. B. C. Congenital Cystic Dilatation of the Common Bile Duct. S. G. 981. 43

The author states that the appearance of a umbilical hernia with a cystic dilatation of the common bile duct is due to the failure of the pharyngeal tube to close at the time of the 4th month of development. The correct diagnosis is made by the pathologic examination of the specimen. The patient died of the disease. The author states that the disease is not rare and that it is often fatal. The patient died of the disease. The author states that the disease is not rare and that it is often fatal.

In the case of the patient, a male, the diagnosis was made by the pathologic examination of the specimen. The patient died of the disease. The author states that the disease is not rare and that it is often fatal.

Of the patient, the subject of the case, the diagnosis was made by the pathologic examination of the specimen. The patient died of the disease. The author states that the disease is not rare and that it is often fatal.

Of the patient, the subject of the case, the diagnosis was made by the pathologic examination of the specimen. The patient died of the disease. The author states that the disease is not rare and that it is often fatal.

If the cystic dilatation is recognized, the diagnosis is made by the pathologic examination of the specimen. The patient died of the disease. The author states that the disease is not rare and that it is often fatal.

Will case as that of a twelve year old boy who was brought to the hospital because of pain

the abdomen. The patient had been ill until two years previously when he had a nocturnal attack of severe pain followed by soreness in the upper abdomen which required morphine. On his admission to the hospital signs of recurrent appendicitis were small and the operation of the appendix and a McKeever's cyst was removed. The region of the liver and its ducts appeared to be negative. About six months later the patient was readmitted to the hospital with a history of severe epigastric pain. Between the attacks he had no discomfort and was able to eat any kind of food. There was no jaundice, belching and the stools were not clay-colored. The preoperative diagnosis was a drop of the gall bladder. Operation revealed a cyst of the common duct which contained 400 cc of normal bile. It was impossible to dissect the cyst and a cholecystectomy was done. The patient made a very satisfactory recovery.

The usual symptom in cases of congenital cystic dilatation of the common bile duct are recurrent attacks of jaundice, pain in the upper part of the abdomen, a palpable cystic tumor, occurring during childhood or early adolescence.

G. R. A. C. T. M. D.

Beard, O. A. A Case of Pancreatic Cyst. A. C. L. O. S. 1. 8

The history of pancreatic cysts is shown by the fact that only 60 cases have been reported in the literature. The patient died of the disease. The author states that the disease is not rare and that it is often fatal.

The patient died of the disease. The author states that the disease is not rare and that it is often fatal.

Of the patient, the subject of the case, the diagnosis was made by the pathologic examination of the specimen. The patient died of the disease. The author states that the disease is not rare and that it is often fatal.

The incidence of pancreatic cysts is about the same as that of the tumor. The patient died of the disease. The author states that the disease is not rare and that it is often fatal.

Tapi, J. Splenectomy in Pernicious Anemia and Leukemia. (L. plé, t. m. d. les. m. p. 1. le. m.) P. 1. d. P. 9. 99

In the cryptogenic type of pernicious anemia the whole hematopoietic system is involved. Splenectomy will affect the cure but will not affect the prognosis. The patient died of the disease. The author states that the disease is not rare and that it is often fatal.

blood transfusion. It is contra indicated in the presence of nervous complications, a red cell count of less than 1,000,000 and a hæmoglobin value of less than 35 per cent. The aplastic type of anaemia does not respond to splenectomy.

In children the cryptogenic type of pernicious anaemia may be treated in the same way as in adults, but splenectomy is less often indicated. In the pseudoleukæmic splenic anaemia of the von Jacksch-Luzet type splenectomy is indicated only exceptionally.

In leukæmias splenectomy has been practically abandoned except in cases of floating or painful spleen and those with pressure symptoms.

MICHAEL L. MASON, M.D.

Spence A. W. The Results of Splenectomy for Purpura Hæmorrhagica. *Brit J Surg* 1928 xvi 466.

The histological changes in the spleen in purpura hæmorrhagica are those of a general hyperplasia of the endothelial phagocytes. The prolongation of the bleeding time is associated generally with a decrease in the platelet count. The coagulation time is normal. The prolongation of the bleeding time is probably due more to a defective quality of the platelets than to a decrease in their number.

The transfusion of citrated blood may be followed by a temporary decrease in the bleeding time to normal and a temporary rise in the platelet count.

Purpura hæmorrhagica may be acute or chronic. Splenectomy is beneficial in 80.9 per cent of the chronic cases and in 16.6 per cent of the acute cases.

In most cases in which splenectomy is successful there is a decrease in the bleeding time to normal and an increase in the platelet count to or above normal. The normal number of platelets may be maintained or there may be a gradual fall to thrombocytopænia. In some cases there is no rise in the platelet count nor diminution of the bleeding time.

The immediate effect of splenectomy on the blood picture is an increase in the erythrocytes and a leucocytosis with a normal proportion of cells. The leucocyte count falls gradually.

It is suggested that purpura hæmorrhagica is a disease of the whole reticulo-endothelial system and of three types depending upon the extent of the involvement of this system. The effect of splenectomy in a given case depends upon the type.

HOWARD A. McKNIGHT, M.D.

MISCELLANEOUS

Harrington S. W. Diaphragmatic Hernia. *Irel Surg* 1928 xi 386.

The embryonic formation of the diaphragm predisposes to herniation at certain sites.

The symptoms of diaphragmatic hernia are varied and clinical diagnosis is difficult without the aid of roentgenological examination. Obscure symptoms in the upper part of the abdomen demand roentgenological examination of the diaphragm. X-ray examination is often helpful also in determining the site of the hernial opening.

When the diaphragmatic hernia produces mild symptoms without incarceration of viscera the patient may be kept under observation and medical management, but progression of symptoms calls for operation. When there are definite attacks of obstruction due to incarceration or strangulation of abdominal viscera operation is imperative.

The operative approach may be thoracic, abdominal or abdominothoracic, but the abdominal route is usually best. Closure of the hernial opening is essential for the relief of symptoms. The suturing of herniated viscera to the abdominal wall or the hernial opening is palliative. Paralysis of the diaphragm by phrenic neurectomy is helpful in the closure of large hernial openings when considerable tissue has been lost.

The operative risk is not great in the eight cases reported; there were no deaths. The best surgical results are obtained in the traumatic cases. In all of the three traumatic cases reported the relief of symptoms was complete. The results of the operation through an abdominal incision are satisfactory in the eight cases reported; there was only one recurrence.

Millar T. M. W. Intra Abdominal Hæmorrhage in Males. *Edinburgh Med J* 1928 xxxvii 161. *Edin Soc*.

Millar reports three cases of intra abdominal hæmorrhage in males. In the first and second cases the hæmorrhage followed a severe crushing injury of the abdomen. In Case 1 the spleen was found free in the abdominal cavity. Following ligation of the pedicle the patient made an excellent recovery. In Case 2 that of a boy six years of age the hæmorrhage was due to a laceration of the dome of the liver. The lesion was treated by packing. The packing was removed on the seventh day without recurrence of the hæmorrhage and the boy was discharged at the end of three weeks.

In the third case the hæmorrhage occurred while the patient was straining at stool. Laparotomy revealed a pedunculated cystic leiomyoma of the posterior wall of the stomach which filled the lesser sac. The blood escaped to the general peritoneal cavity through the foramen of Winslow. Removal of the cyst after clamping of the pedicle was followed by uneventful recovery.

In each case a transfusion was given after the operation.

WILFRID I. CRUICKSHANK, M.D.

GYNECOLOGY

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f o l l v t h a b l m i n a l r o t e s h o u l d b e c h o s e n T h e
a g n a l r o t e i p r f a b l e w h n s o m e f o r m of l o v e r

t t i o u h a t h W t k s F r e u n d W e r t h e i m o p
e r a t t b e p f o m e d T h e l a t t e r i s c o n v e n i e n t
i t h e c o f f t o m e n a t o r b e y o n d t h e m e n o

p u e p a t c u l a l y i f b e g i n n i n g m a l i g n a n c y of the
f u n d u s u s p t c d s i n c e i f s u c h a c o n d i t i o n i s d s
o e l v a g i n a l h s t r c t o m y m a y b e s u b t i t u t e d

f t h c o n s r a t e p r a t n A n t h e r a d a n t g e
of t h i s o p a t i n i s t h t a l l f t h d e s c a s d t i s s u e
c o m e u d r t h v f t h e s u g e o n t h u s n a b l i n g

h u m t o r o g n e a n d p e c r v e t h e n o m a l t i s s u e
Th t e h i q u f t h e b d o m n a l a n d v g n a l p r o
d u r s d c b e d v t h a d i l l u s t r a t i o n

R R T M G R I E M D

Heyman J R d l g c l o r O p e r a t i e T t m e n t
f C a n c e of th U t u s i t d o l 97
363

Heym n h a e n d e a o r e d t o c o l l e c t a l l o m p l e t
t r i t i c s p u b l i s h e d i n t h e l i t e r a t u r e p e r t a i n g t o
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u t e r u s T h e s e f i g u r s w h i c h i n c l u d e t h e
u l t i m a t e r e s u l t s of o p e r a t i v t h r a p y h v e b e e n
p r i m a r i l y c o m p u t e d a c c o r d i n g t o u n i f o r m p r i n c i p l e s

n o d e r t o d e t e m i n e a c t l y w h a t h a s b e e n a c c m p l i h d
p l h d T h e h i g h e s t f i g u r e t h a t c a n b e r e a s o n a b l y
f e d a s r e p r e s e n t i n g t h e a b s o l u t e r e s u l t i n o p

t s s 202 p r c n t
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a d i o l o g i c a l l y n t h e f i s t p l a c e a n d 41 c s s n o t
t r e t e d T h e m t c e v a t i v e f i g u r e f r t h e a b
s l u t e r e s u l t s t h a t c a n b e d e d u c e l f m t h e s t a t

t i c s i s 07 p c e n t
I n t v o t h i r l f t h e p r a t i c s t a t i s t i c s r e f e r e d
t o t h e n u m b r of o p r a b l e 586 p r c e n t r

m o r i n t h e s t a t i s t i c s f r o m R a d u m h e m m e t 266
p e c e n t W t h d u e e g d t o t h s d f e r e n c e i n t h e
i n t a l m t e i a l i t c a n o t b e c o s d t o o b o l d t o
c o n c l u d t h t h e r a d i o l o g i c a l t r e a t m e n t a s p a c

ticed at Radiumhemmet in respect to the absolute results in the treatment of cancer of the uterine cervix is superior to operative treatment.

Regarding the results of the treatment of operable cases alone the radiological statistics are still too small to allow of any comparison with the operative results but the figures so far available lend no support whatever to the assumption that operative therapy in these cases would have accomplished more than the radiological treatment.

The figures hitherto published regarding operative as well as radiological treatment of cancer of the corpus are still too small and incomplete to permit any definite conclusions.

Operative statistics show the absolute result to be 42.8 per cent and the results with operation in operable cases alone 58.8 per cent. The statistics from Radiumhemmet include 46 cases with an absolute result from radiological treatment of 43.5 per cent and a recovery percentage in operable cases of 60.0 per cent.

These figures seem to indicate that the same result can be attained with radiological as with operative treatment.

Capizzano N. Radium Therapy of Cancer of the Cervix of the Uterus (Radioterapia del cáncer del cuello del útero). Bol. Soc. de obst. y ginec. d. Buenos Aires 927 vi 517

The author reports 216 cases of cancer of the cervix of which 73 were treated in 1924, 60 in 1925, 37 in 1926 and 46 in 1927. In 13 cases the lesion was a recurrence after a Wertheim operation and in 9 a cancer of the stump after subtotal hysterectomy. Twelve cases had been treated intensively with roentgen rays and radium. In 3 cases there was a fistula and in 3 others the lesion was complicated by pregnancy. In 117 of the cases the condition was an inoperable vegetating carcinoma and in 59 a carcinoma of the cavity. All of the 73 patients treated in 1924 were in a very serious condition. Twelve of these patients are still alive after more than three years, 10 others were still living in 1926 but have not been heard from since and 9 are dead. Nothing is known of the rest. This gives a survival for more than three years in 16.43 per cent of the cases and of more than two years in 30.14 per cent. Leaving out the hopeless cases in which radium therapy was given only to please the patient, 12 (2.22 per cent) of 54 patients survived for more than three years and 2 (44.74 per cent) survived for more than two years.

In cases of tumor of the cavity with great infiltration the author uses a filter of 2 mm. of gold for seven days giving 40 to 50 mc. in cases of vegetating carcinoma he uses 0.5 mm. of steel.

In some cases in which radium brought about disappearance of the tumor operation was performed afterward. Of four patients treated in this way two died after the operation. In the cases complicated by pregnancy the lesion cicatrized perfectly without changing the course of the pregnancy.

Two patients were operated upon before reaching the fourth month, one of these died after the operation.

LAVLOVSKY in discussing Capizzano's paper said that in December 1924 he had reported thirty cases of cancer, fourteen of them treated with radium exclusively. These were very advanced and inoperable cases. Eleven of the patients had died but three were still living. The latter have died since. One whose condition seemed to be very favorable died of generalized abdominal metastases and cachexia two years and six months after the treatment. Since then Lavlovsky has treated three other inoperable cases. One of the patients died, the second is well and the third is in a very favorable condition. The third patient, sixty-three years of age, had an inoperable cancer of the cervix. The first series of radium treatments was given September 3, 24 and 5, 1925; the second on December 5, 1925 and the third on December 20 and 6, 1926. On November 10, 1927 the patient was in very good condition.

BENGOLA reported that he has treated eleven cases with radium exclusively. Two of the patients died and among the nine others there were four good results, four poor results and one mediocre result. Four of the patients are living after three years, two years, two years and one year respectively. In fourteen cases radium therapy was given before operation and the results led Bengola to believe that it is preferable not to operate after radium treatment. The operation is dangerous, difficult and incomplete and tends to accelerate recurrence. Bengola has had no experience with radium alone in operable cases but believes from experience in inoperable cases that the results would be as good as those of surgery.

CARRANZA said that he did not share the optimism which others had expressed in regard to radium treatment. He thinks that operation is preferable whenever possible and that exploratory laparotomy shows it to be possible in some cases in which it does not appear to be so clinically.

In conclusion, CAPIZZANO said that in his opinion a survival of more than three years in 16.46 per cent and of more than two years in 22.22 per cent of inoperable cases is a very good argument in favor of radium treatment and called attention to the fact that recurrences develop even after a Wertheim operation.

ALFRED G. MORGAN, M.D.

Carranza F. and Roffo A. H. Results of Deep Roentgen Therapy in Cancer of the Uterus During a Period of Five Years (Radioterapia profunda en el cáncer de la matriz durante cinco años). Bol. Soc. de obst. y ginec. de Buenos Aires 97 i 58

Carranza and Roffo report the results of deep roentgen treatment of cancer of the uterus in 230 cases treated during the years 1923 to 1926 inclusive, dividing the patients into four groups according to the stage of development of the tumor. In

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ADNEXAL AND PERIUTERINE CONDITIONS

Rubin I C Tub I P t e c y A Study f Ste lity
by P u t r n l n u f f i a n and the kymo
graph J i m M d 98 99

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T e s t J l M l 98 6

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a s f l l o

1 Menorrhagia metrorrhagia and puberty bleed-
ing showed in most cases excessive ovarian activity
evidenced by the presence of the hormone in the
blood long after it would have disappeared in normal
cases

2 Functional over activity was demonstrated in
cases of premenstrual tension without excess
bleeding and even in the presence of amenorrhœa

3 Amenorrhœa is of four types (a) a grave type
without a cycle (b) a type with a subthreshold cyclic
reaction for the presence of the hormone (c) the
self limited type with impending menstruation
which can be predicted from the strong positive
test and (d) the type due to persistent corpus
luteum The gravity of the amenorrhœa depends
on the type

4 Ovulation and cyclic changes in the sexual
organ may occur in women who have never men-
struated

5 The test when positive permits of the deter-
mination of sex

6 Women who are sterile may probably be classi-
fied into two groups those with a normal cycle and
those with depressed function In the first group
other factors besides ovarian function are involved

7 Death of the fetus after the twelfth week is
manifested by absence of the hormone in the blood

T FLOYD BELL M.D.

**Hirst B. C. Ovarian Dysfunction Dependent on
Abnormalities of the Ductless Glands 4 J
Obst & Gyn 9 8 79**

The author discusses the agents and choice of
treatment in cases of scanty and infrequent men-
struation or complete amenorrhœa and the accom-
panying sterility The three specific agents that
may restore or initiate a normal sex physiology are
the sex hormone electrical stimulation of the pelvic
organs and the stimulating dose of the X ray

With the first two agents Hirst has had experi-
ence but with the last one he has had none and has

felt reluctant to recommend it until the radical
differences of opinion among roentgenologists have
been reconciled

During the past year or more he has used a
preparation of the sex hormone in about forty cases
The results have been in some instances quite strik-
ing in others negative On the whole his results
were much like those of Frank Pratt Allen and
others There seems to be no rational explanation
of this fact except dosage If Lowe's calculations
are correct and if weight alone dictates the dose
women should receive 3 000 mouse units or 600 rat
units which is far as he knows they have never
received It would appear that at least 100 rat
units might be the initial dose to be increased
steadily until something like the invariable effects
in the lower animals appear If ampules containing
from 25 to 35 rat units are supplied such doses
seem practicable Lowe points out that the sex
hormone is stable in the system and that the effect
of the injections appears in mice and rats at the end
of seventy two hours and that in clinical cases the
injections need not be given more frequently than
every other day

In regard to electrical stimulation of the pelvic
organs the author feels that he is on much surer
ground He has employed this agent for more than
fifteen years and in some cases has cured results
not to be obtained in any other way With the
negative pole in the shape of a metal ball on an
insulated handle resting against the cervix and a
large sponge pad on the abdomen galvanism (about
12 ma.) faradism and the sinusoidal current can
be applied The results have been best in cases of
suprinvolution but they have been encouraging
also in primary amenorrhœa and lack of development
except in extreme cases that were obviously hope-
less Incidentally this treatment will cure per-
manently the most obstinate cases of constipation
and hypertension dependent upon intestinal tox-
æmia

ALBERT M. A. LEIMER M.D.

OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

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l u c o c y t o l a e d h a m o g l i n l y m p h o c y
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Th i s t h f i t a s o f l e l e r v i n a h e m o p h i l i a c
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W A C M G A N M D

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uterine cavity and produce atrophy or hypertrophy of the lining mucosa

2 An increased muscular activity of the uterine contractions which are constant and tend to evolve the tumor in the direction of least resistance inward or outward depending upon its relation to the musculature. That this state of intermittent contraction is unfavorable to the growing ovum is evident from the fact that of the author's series of cases of pregnancy occurring in a fibroid uterus 1 per cent terminated by abortion

Not only do fibroid influence the growth and development of the pregnant uterus but pregnancy has a like effect upon fibroids. The rapid increase in the size of fibroid during pregnancy is due to the increase in their blood supply incident to the pregnancy and their participation in the general succulence and hypertrophy of the contiguous structures. It is however the location of the fibroids which determines their effect upon the pregnancy.

A subperitoneal fibroid near the fundus may by its weight displace the uterus backward and incarcerate it in the pelvis in such a way as to produce circulatory disturbances nerve pressure and oedema. An interstitial fibroid in the same location may produce no symptoms. Submucous fibroids however are extruded more and more into the uterine cavity thus producing a pressure atrophy in the overlying endometrium and a hypertrophy due largely to the oedema in the contiguous uterine lining. Such a mucosa offers a poor surface for the embedding of the ovum and when embedding does occur placenta accreta is not unlikely to follow. Submucous fibroids also dislocate the fetus in their growth.

Tumors in the lower segment of the uterus may interfere with conception by distorting the cervix or changing the character of the uterine secretion. During labor they tend to cause malposition of the child and block delivery. In the puerperium they prevent proper drainage of the lochia.

Malpresentation of the child favoring premature rupture of the membranes premature or dry labor uterine inertia and mechanical dystocia are frequent complications of fibroids.

The influence of the pregnancy on fibroids must also be borne in mind. During pregnancy and the puerperium a large percentage of fibroids undergo some form of degeneration as the result of the circulatory stasis. Red degeneration of fibroids which is not uncommon represents the partial death of the tissue within the tumor with hemorrhage into the growth. Areas of such degeneration however are usually surrounded by sufficient healthy tissue to insure their recovery. The blood pigment from the hemolyzed cells unites with the necrotic cells.

During the puerperium submucous and interstitial tumors may be extruded into the cavity of the uterus and resulting infection of the necrotic mass may induce a puerperal infection with foul lochia, sepsis and hemorrhage.

Myomata may render pregnancy pathological by causing constant pain increasing the uterine con-

tractions and producing pressure symptoms abdominal distention and cardiac digestive and pulmonary disturbances.

Subserous tumors usually do not interfere with labor unless they encroach upon the lower segment of the uterus or are subserosal or intraligamentous or become twisted adherent or impacted in the cul de sac. Fibroids that are firmly impacted in the pelvis and displace or distort or block the cervical os may render intravaginal delivery dangerous. Intravaginal delivery through a blocked pelvis always has a high maternal mortality.

Multiple myomata in the body of the uterus have a direct influence on the character and force of the uterine contractions during labor and favor post partum hemorrhage by causing uterine inertia. They usually delay and prolong the first stage of labor and increase the pain of the contractions. If they are situated in the lower segment of the uterus and prevent the normal presentation of the fetus they may cause early rupture of the membranes. In the third stage of labor they interfere with the separation and expulsion of the placenta.

However relatively few cases of pregnancy with fibroids require radical surgical intervention. In the author's series of 1,000 cases there were only 60 in which the position and size of the fibroid caused anxiety during the pregnancy or labor only 6 in which removal of the tumor was necessary during the pregnancy and only 4 in which section was required to effect delivery.

The policy should therefore be one of expectancy. When the tumor is found in the pelvis in the early months of pregnancy an attempt should be made to displace it with the patient in the knee chest position. When this fails the knee chest posture preceded by a minute or two of the milk kick three times a day should be tried. The tumor is frequently carried up and out of the pelvis by the growth of the uterus or by the retraction of the lower segment during the first stage of labor. Operation is indicated during the progress of gestation only when the tumor is incarcerated when a pedunculated tumor becomes twisted and when a subserous growth enlarges so rapidly that it embarrasses the heart or respiration or the development of the pregnancy. In cases of red degeneration it is safer to allow the acute symptoms to subside and the pregnancy to progress than to attempt myomectomy.

During labor manipulation through the vagina is of little avail when the tumor is incarcerated and blocks the birth passage. Attempts to displace it manually may result in injury to the mother the child and the newborn. It is far safer to place the patient in the knee chest position and wait for the retraction of the lower segment. If this does not lift the tumor out delivery should be effected by section followed by enucleation or hysterectomy.

All fibroids undergo some degree of atrophy immediately after delivery but many of them particularly intramural growths diminish in size and disappear during the period of involution. Submucous

pregnancy has progressed to the seventh month and the lesion is unilateral it is usually better to temporize but in a few cases the uterus should be emptied to allow proper investigation and operative interference. If bilateral renal tuberculosis is present and the pregnancy has not progressed beyond the fifth month (Dubois) abortion should be induced and the more seriously affected kidney removed. After the fifth month medical and expectant measures are indicated.

Cardiopathies. Cardiac disease complicating pregnancy is pre-eminently amenable to medical treatment. Most pregnant women with cardiac disease can be carried to or almost to term. In a few cases however the pregnancy should be interrupted. The guides to follow are the condition of the myocardium and the cardiac rhythm. Audebertin gives the indications for the induction of abortion as follows:

1 Cases with signs of grave myocardial failure: dyspnoea without exertion, oedema of the extremities, pulmonary congestion, bilateral rales, enlargement of the liver and tachycardia which resist treatment. When there is mitral stenosis the prognosis without abortion is particularly unfavorable.

Cases of complete arrhythmia which do not respond to digitalis.

3 Cases of mitral stenosis without fibrillation or oedema but with constant severe tachycardia.

Pulmonary tuberculosis. The author reviews the reports on pulmonary tuberculosis in pregnancy which were made at the Congress of Geneva in 1913. He takes the stand that in the presence of this complication the rule should be to allow the pregnancy to proceed and to treat the tuberculosis. If abortion is necessary it should be induced only before the fifth month and then only when it is certain that both the mother and the child would die without it. After the fifth month abortion is resorted to with more danger than continuation of the pregnancy.

Laryngeal tuberculosis. If laryngeal tuberculosis is recognized in its early stages interruption of the pregnancy is indicated. When the tuberculosis is far advanced abortion will cause an exacerbation.

Tuberculous meningitis. In tuberculous meningitis abortion is indicated only if the child is viable.

Mental disease. Ordinary insanity occurring in predisposed pregnant women does not require abortion. In the true psychoses of pregnancy due to toxæmia abortion may lead to cure but there is no assurance that it will do so.

Acute hydramnion. Acute hydramnion is very rare and usually terminates in abortion. If spontaneous abortion does not occur and symptoms of dehydration appear abortion should be induced.

Uterine hæmorrhage. Spontaneous abortion often follows uterine hæmorrhage. In rare cases a retroplacental hæmorrhage occurs and demands immediate intervention. Uterine bleeding is most often due to endometritis, low implantation of the placenta or hydatidiform mole. Hydatidiform mole is a tumor and should be removed. Severe hæmorrhage requires immediate intervention. In repeated hæmor-

rhage of less severity the indications are less clear. Bonnaire favors abortion when the red cell count is 1,000,000 or less. A more accurate index to the anæmia is the hæmoglobin. In every day practice the pulse is the supreme guide. When the pulse under 100 an expectant course may be pursued when the pulse exceeds 100 the indications for intervention are urgent.

MICHAEL L. MASOV, M.D.

Mussey R. D. Toxæmia of the Later Months of Pregnancy. Its Prophylaxis and Treatment. *Brit. Med. J.* 1914, vi, 533.

Mussey discusses the ordinary treatment of toxæmia and stresses the importance of prenatal care with special attention to the diet and the prevention of an increase in weight. In severe cases of pre-eclamptic toxæmia marked improvement results from the use of ammonium chloride or ammonium nitrate as a diuretic. The accepted method of treating eclamptic convulsions include the administration of sedatives, the use of lavage and laxatives to improve elimination, subcutaneous intramuscular and intravenous medication and termination of the pregnancy. The question is raised regarding the advisability of cesarean section as a method of rapid delivery in cases of pre-eclamptic toxæmia and eclampsia in the absence of dystocia or other obstetrical indications.

Paramore R. H. Chronic Nephritis, Accidental Hæmorrhage and Eclampsia. *J. Obst. & Gyn. Brit. E.* 1912, xxv.

Paramore states that chronic nephritis, accidental hæmorrhage and eclampsia are interrelated and when a woman with chronic nephritis becomes pregnant if abortion or miscarriage does not occur she may eventually become eclamptic or uræmic. In accidental hæmorrhage albuminuria may appear and eclampsia develop even if no evidence of renal disease existed previously.

While the complication of pregnancy in women with chronic nephritis can be attributed to the nephritis toxæmia following accidental hæmorrhage is believed to be due to a cause other than renal insufficiency.

The outstanding feature of pre-eclampsia is a diminished output of urine. Eclampsia and diuresis are incompatible. When women with chronic nephritis become pregnant they rarely become eclamptic. Eclampsia does not depend on inefficient kidneys alone; it requires also inefficiency of the liver.

The clinical differentiation between eclampsia and uræmia is often impossible. A study of the postpartal progress is frequently necessary before a diagnosis can be made.

In the endeavor to distinguish between these two clinical entities attention was directed to the state of the blood. In general the blood pictures are different. In eclampsia the non-protein nitrogen of the blood is not greatly raised in uræmia it increases markedly. As the non-protein nitrogen of the blood in eclampsia is only slightly different from the

normal the conclusion has been drawn that clamping the aorta in a uæmia—not due to an increase of the products; the blood nor to a primary defect of the electrolyte.

The author likewise noted lithæmiasis from the intestinal tract and peripheral tissues and its importance in pregnancy toxæmia.

He believes that the lamps of the aorta in uæmia are a logical pathologic factor. He emphasizes the importance of the electrolyte balance in the production of the blood due to the metabolic changes of the kidneys in both.

Regarding the treatment of the patient with a normal blood metabolism, the author emphasizes the importance of the electrolyte balance in the production of the blood due to the metabolic changes of the kidneys in both.

Parham also states that in the case of the patient with a normal blood metabolism, the author emphasizes the importance of the electrolyte balance in the production of the blood due to the metabolic changes of the kidneys in both.

Mussey, R. D., and C. N. J. F. Operations for Nephritis. Duquesne, Pa. 1917.

The author points out that the patient with a normal blood metabolism, the author emphasizes the importance of the electrolyte balance in the production of the blood due to the metabolic changes of the kidneys in both.

If regarded as a normal condition, the patient with a normal blood metabolism, the author emphasizes the importance of the electrolyte balance in the production of the blood due to the metabolic changes of the kidneys in both.

occurred if the patient is or not pregnant. Intraluminal operations should not be performed after the sixth month if they can be avoided.

In the postoperative treatment of hypocalcemia, the author emphasizes the importance of the electrolyte balance in the production of the blood due to the metabolic changes of the kidneys in both.

Operation should be deferred until after the fifth month of gestation with the patient in the hands of the child.

An operation for the removal of a large cyst of the ovary is indicated in the case of the patient with a normal blood metabolism, the author emphasizes the importance of the electrolyte balance in the production of the blood due to the metabolic changes of the kidneys in both.

LABOR AND ITS COMPLICATIONS

Gibbons, R. A., and C. N. J. F. Operations for Labor. J. O. G. B. E. P. 1917.

After the first three or four days of the onset of labor, the author emphasizes the importance of the electrolyte balance in the production of the blood due to the metabolic changes of the kidneys in both.

Gibbons, R. A., and C. N. J. F. Operations for Labor. J. O. G. B. E. P. 1917.

Van Auker, W. B. D., M. P. H. N., and M. G. N. M. Sulphate of Iron in the Treatment of Labor. J. O. G. B. E. P. 1917.

Of the thirteen cases of labor in which the author used the first synthetic analgesic, the author emphasizes the importance of the electrolyte balance in the production of the blood due to the metabolic changes of the kidneys in both.

Twenty-five women were definitely relieved of pain by the first hour of the operation.

relieved (one expelled part of the retention enema) In two cases the relief was doubtful one patient was a neurasthenic and the other did not receive sufficient treatment In even cases there was no apparent relief One of these seven expelled a large amount of the retention enema four others were given only the first injection as the treatments were started too late for the administration of the oil ether Four of the thirty nine labors were apparently delayed by the treatment and one went out of labor The latter was a multipara who had had in frequent pains for seven hours preceding the initial hypodermic containing 1/6 gr of morphine with 1 cm of magnesium sulphate At the time of the injection the cervix was soft and dilated two and one half fingers and pains were occurring every five minutes and lasting thirty seconds The pelvis was normal and the vertex at the superior strait was in a left occiput posterior transverse position The only complication was fibroids in the lower uterine segment The record states that the hypodermic was apparently given too early

The average duration of labor in the entire series was fifteen hours and sixteen minutes In the multiparae the average duration was fourteen hours and twelve minutes and in the primiparae sixteen hours and twenty minutes

In conclusion the author submits the reports of seven obstetricians outside of New York In a total of 642 cases the method was successful in 6 per cent partially successful in 21 per cent and unsuccessful in 12 per cent In a series of 180 cases it was successful in all In a series of 200 cases it was successful in 70 per cent partially successful in 28 per cent and unsuccessful in 2 per cent The poorest results were obtained in a series of 50 cases in which the anesthesia was satisfactory in only 34 per cent partially satisfactory in 36 per cent and poor in 30 per cent The poor results were attributed to in duction of the rectal anesthesia at the wrong time

PETER GRAFF LINO MD

Bohnen P A Case of Rupture of the Aorta During Labor and a Case of Defect of the Septum (Ueber einen Fall von Aortenruptur unter der Geburt und einen Fall von Septumdefekt) *Zentralblatt für Gynäkologie* 1927 li 398

The first case reported by the author was that of a primipara aged twenty six years who was brought to the hospital in the ninth month of pregnancy with strong labor pains The history the dyspnea and the loud systolic murmur over all of the valves indicated the presence of a cardiac defect Shortly after admission to the hospital the patient suddenly raised her self collapsed and died A cesarean section was done but the child was found dead The autopsy report stated that the mother's death was due to rupture of the aorta above the valves and at the aortic arch hemopericardium and severe general arterio sclerosis especially in the abdominal aorta and the arteries at the base of the brain The most important factor causing the rup-

ture was the hypertension produced in the injured vascular system during the labor which was increased as the result of an arteriosclerotic contracted condition of one kidney and hypoplasia of the other

The second case which Bohnen reports was that of a primipara twenty one years of age who with an existing defect of the septum went through delivery quite satisfactorily except for a transitory atony after expulsion of the placenta (low forceps delivery) Death occurred on the third day of the puerperium The defect of the septum was demonstrated at autopsy

BOHNEN (G)

Rascol Delivery Expedited by Means of Large Median Anterior and Posterior Incisions Made in the Cervix at the Onset of Dilatation Because of Fetal Distress (Accouchement brusque au moyen de grandes incisions médianes antérieures et postérieures du col tout à fait au début de la dilatation pour souffrance fœtale) *Bulletin de la Société d'Obstétrique* 1927 1 555

Rascol reports the case of a primipara four days past term With the onset of slight pains the membranes had ruptured spontaneously When the patient was seen by Rascol soon thereafter the fetal heart tones were irregular and scarcely perceptible and could not be counted Examination revealed a dilatation of 1 cm a deeply engaged head and a very thin soft cervix

A deep incision was made in the midline of the anterior and posterior lip of the cervix and the baby immediately extracted Ten minutes were required to accomplish resuscitation Severe hemorrhage occurred as the result of uterine inertia but there was no bleeding from the cervical incision

Examination of the patient at the time of her discharge revealed no trace of the incision in the posterior lip and only a notch of about 1 cm in the anterior lip

CORRICH C SCHAEFFER MD

Rascol Three Cases of Median Anterior and Posterior Incisions Made in the Cervix in the Course of Labor Prolonged by Rigidity of the Cervix (Trois cas d'incision médianes antérieures et postérieures par rigidité du col) *Bulletin de la Société d'Obstétrique* 1927 1 559

Rascol reports three cases in which anterior and posterior incisions were made in the cervix prior to delivery as recommended by Audebert The dilatation varied from 3 to 5 cm the cervixes were very rigid and infiltrated the labors were prolonged and morphine was ineffectual In two cases the head was low but in one case it was high and the pelvis was contracted Though the incisions can be made with comparative exactness by touch alone the use of a double bladed speculum and a Museux forceps is very helpful

No complications resulting from this procedure have been observed In two cases examination twenty days after delivery revealed that healing had not yet occurred but in one case no trace of the incisions remained at the end of that time

X-ray examination should always be made in cases of suspected disproportion.

ROBERT M. GRIER, M.D.

PUERPERIUM AND ITS COMPLICATIONS

Zillboorg, G. Malignant Psychoses Related to Childbirth. *J. Obst. & Gyn. & 1908*, 14.

The author stresses the fact that the term "puerperal psychosis" connotes merely a mental disorder occurring in relation to and usually following childbirth and that there is no definite clinical entity to be classified under this heading. Disregarding the toxic and infectious psychoses which are the same in pregnant and parturient women as in other subjects, both male and female, he raises the question as to the etiology of the so-called idiopathic group. It is possible that the psychic resistance of women with such psychoses is too low to withstand the strain of childbirth. The women therefore should exhibit signs of low resistance which might be recognized before the development of a definite mental disease.

Zillboorg has made a search for signs of low resistance in malignant, i.e., chronic and incurable psychoses and gives detailed histories of four typical cases. He concludes that the patient likely to develop a psychosis during pregnancy or shortly after its termination will frequently manifest a personality of the schizoid type, prominent elements in the history being a story of premarital shyness and of persistent frigidity after marriage. Habits of childhood, such as enuresis or masturbation, may be carried over into adult life, showing an arrest in the psychophysiological development. An antagonism toward the husband may develop during pregnancy and is invariably observed in every puerperal case of the type under discussion. When a woman of this type has weathered one pregnancy successfully, her postpartum reactions should be studied very carefully as another pregnancy, if permitted, might precipitate a malignant psychosis. This occurred in one of the cases reported.

E. L. KING, M.D.

Seymour, H. F. A Case of Pneumococcal Peritonitis During the Puerperium with Recovery. *J. Obst. & Gynec. & 1914*, 19, 731-793.

Seymour reports a case of pneumococcal peritonitis which developed on the ninth day following a normal delivery. On the sixth day the patient was given 5 gr. of bishydrochloride of quinine intramuscularly and 60 c.c.m. of polyvalent antistreptococcal serum as it was believed that the case was one of streptococcal infection.

On the ninth day a diagnosis of peritonitis was made and the abdomen was opened and drained. A culture taken at this time showed pneumococci. Convalescence was greatly prolonged, the fever persisting for about six weeks.

Seymour has found only one similar case reported in the literature.

A. H. GLADEN, JR., M.D.

Latzko, W. The Surgical Treatment of Puerperal Processes (La terapéutica quirúrgica de los procesos puerperales). *Arg. de obst. y ginec.* 1917, 1, 97.

The first extirpation of the uterus in puerperal infection was performed in 1886 by Schultze in a case of putrid placenta which could not be removed in any other way. The extirpation was supravaginal.

Theoretically, the operation is justifiable because if the infection is still localized, removal of the uterus will prevent generalization of the disease. However, it is extremely difficult to determine whether the infection is still localized. Latzko believes that supravaginal amputation is justified in cases with continued high fever and chills. Extirpation in puerperal sepsis requires particular care on account of the great virulence of the contents of the uterus.

Puerperal pyemia is treated surgically also by ligation of the veins. Latzko presented his first case of ligation of the veins for puerperal pyemia before the Medical Society of Vienna in 1905 and in 1910 he was able to report thirty-seven cases. To-day ligation of the veins has become an important part of his operative technique.

Puerperal pyemia should not be confused with metrophlebitis. The latter is a local condition whereas the former is general. It is difficult in extirpation of the uterus to determine just the right moment at which to perform the operation, but as these processes are chronic, haste is not urgent. At first Latzko ligated the hypogastric, but he now prefers to ligate the common and external iliac because this does not cause thrombosis of the foot. If both uterine venous plexuses are thrombosed or if the thrombosis has extended to the common iliac, the vena cava may be ligated. Kohn in 1923 collected from the literature the reports of seven cases in which ligation of the vena cava was done with recovery in four.

The author believes that operation should immediately follow a diagnosis of puerperal peritonitis just as cases of rupture of an extrauterine pregnancy. The object of operation in puerperal peritonitis is to evacuate the fluid containing the toxins and virulent bacteria to overcome the meteorism and intestinal paralysis and to treat the weakness of the circulation that follows the peritonitis. Generally the primary focus is not eliminated as the patients are not able to stand the operation.

Latzko operates under light ether and then without the Trendelenburg position. When there is great meteorism of the large intestine, the intestine may be punctured and the puncture sutured. In tense meteorism of the small intestine may be treated by the formation of a Witzel fistula. These procedures are generally not necessary.

After having sponged out the exudate, Latzko irrigates the abdomen with 500 gm. of ether. For drainage he uses a coffee-drum drain which is similar to the rubber dam used in dentistry. The abdominal wound is closed except for the drainage opening and the patient then placed in Fowler's position.

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of newborn infants are separated from their mothers despite the measures that have been taken to discourage the practice. He believes that more aggressive measures should be taken not only by the State but also by the members of the medical profession.

Many mothers abandon their babies because of shame or poverty, making no attempt to see that they are placed so that they will receive proper care. The number of abandoned babies is still astounding in spite of the fact that it has slightly diminished. In the Department of the Rhone the number dropped from 452 in 1911 to 377 in 1913. The mortality among these infants is very high, averaging about 40 per cent.

The number of infants placed in nurseries or homes shortly after birth seems to be increasing. It appears that in Paris one of every five infants is placed in a nursery. The lack of proper care and feeding in many such establishments is attested by the fact that of 10,000 infants so placed in the period from 1920 to 1926 only 1,701 (1 per cent) were breast fed. The mortality of infants cared for in nurseries is at least double that of infants cared for by their mothers.

Many mothers are of course ignorant of the dangers of artificial feeding and do not realize the claims that their children have upon them. Social conditions also play an important role. In many instances the mother must work and is obliged to place her child in a nursery because she finds it impossible or inconvenient to keep it with her. Poverty is an important factor. In some cases the lack of proper housing is responsible for the placing of a child in an institution. In a few instances of course as when the mother is suffering from tuberculosis, dementia or puerperal psychosis separation of the mother and child is advisable.

There are a number of establishments at present which attempt to better the condition of babies left without maternal care but these tend to encourage rather than discourage the separation of mother and child. In many of these nurseries wet nurses are provided so that the infant receives some mother's milk, but it is found that the wet nurse's child does better than the stranger. In most of these nurseries artificial feeding is practised exclusively and the mortality among the infants is high. The best plan seems to be to place the child in a private home where it will receive a mother's care and will be under the supervision of a physician and visiting nurse.

Rhenter classifies the measures adopted or suggested to discourage or prevent the separation of

mother and child into three groups: the psychological and moral, the legal and the institutional. He believes that every physician should aid in the campaign for the education of prospective mothers. Prospective mothers should have impressed upon them the great value to the child of proper care and maternal feeding. In some hospitals the mother is required to nurse her child for fifteen days after delivery and it is found that during this time she often becomes so attached to it that she will not consider separation. Some lying-in hospitals have associated nurseries to which the mother may go for a time after delivery.

Legally the greatest help would be assured by some measure which would give financial aid to nursing mothers. There is at present an act which gives each working mother who is nursing an infant two periods of one half hour each during her working day when she may feed her child.

There are now certain charitable institutions where a nursing mother may receive food. Many of the larger industrial institutions give financial aid to the families of their employees when a child is born and regularly increase the pay of the employee with each addition to his family. Postnatal clinics in association with prenatal and maternity clinics are of great value.

The working mother presents problems which are solved in various ways. If the child can be left at home in the care of some member of the family while the mother goes to work it can be given two artificial feedings during the mother's absence. The results of this plan are excellent. If home conditions do not permit such an arrangement the child may be placed in a day nursery. Day nurseries should be under very strict surveillance. In Paris about fifty large factories and similar establishments provide facilities which make it possible for the mother to bring her child to work with her and nurse it during the day. This plan is excellent and should be encouraged.

When the mother is without a home the child is usually illegitimate. For such cases various types of maternal homes have been founded. In some of these the mother is delivered and may remain for a time. Others are connected with maternity hospitals while still others have no connection with a maternity hospital but care for the mother and child for from three to eight months.

Hunter believes that more use should be made of the means at hand that further aid from the state should be forthcoming and that there should be more widespread education of prospective mothers.

MICHAEL J. MACAULAY

GENITO-URINARY SURGERY

ADRENAL KIDNEY AND URETER

M Kenzie D W nd Ha th n A B Uni
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In the second case an intraperitoneal injury was suspected. Operation revealed a bulging of the ascending colon and the peritoneum beneath it. The right kidney showed a laceration at the middle of the upper half. The wound was bleeding freely but the renal pelvis was not involved. The hemorrhage was controlled by suture of the kidney. Recovery followed.

The third case required nephrectomy because of persistent bleeding for eight days. Ivelography revealed a severe injury of the kidney. The organ was embedded in clot and fibrin and showed several lacerations with marked injury of the pelvis. Recovery resulted.

Cases with a persistent decrease in the blood pressure and erythrocyte count and an increasing pulse rate should be operated upon. Those with only slight pain and evidence of secondary hemorrhage and with hematuria as the chief symptom may be treated expectantly in a hospital and kept under close observation until the hematuria subsides. Cystoscopy is usually not necessary for diagnosis but should be done in occasional cases to determine the condition of the damaged kidney. In selected cases pyelography is an aid. A moderate leucocytosis (13,000 to 18,000) may not indicate infection as it may be due to absorption of the blood clot and secondary anæmia.

It is safer to investigate doubtful cases under regional anesthesia than to treat them expectantly. Regional anesthesia has the advantage of not increasing the blood pressure. Operation is indicated to prevent exsanguination, extravasation and infection. The morbidity depends more upon the state of shock and subsequent infection than upon the amount of the secondary hemorrhage.

LOUIS NEUWELT, M.D.

Cumming R. E. Polycystic Kidney Disease. *J. Urol.* 1928, xiv, 149.

Cumming says that a patient with polycystic kidneys is as old as the cyst development. When the cysts reach a certain stage they are ripe and life is no longer possible. The completely developed disease has been found at birth as well as in old age. In the examination of the patient all diagnostic maneuvers must be made with the utmost care. Simultaneous catheterization of both ureters is dangerous and bilateral pyelography is definitely contra-indicated.

The pelvis of a polycystic kidney is rarely dilated but is usually narrow and lengthened in contrast to that of the hydronephrotic kidney. The cysts of the polycystic kidney are closed while those of the hydronephrotic kidney are in communication with one another. Polycystic disease is always bilateral but may be more developed on one side than on the other. Frequently it is associated with deformities in the skeleton and in other organs especially the liver.

Retention alone does not explain the cyst formation. The condition is the result of a partial arrest

of development at the mesonephric stage followed by degenerative changes. In adult life the cysts contain blood, pus and evidences of infection. According to Brunsch hematuria is a definite sign in 40 per cent of the cases.

The etiological factor is an inherited protoplasmic insufficiency which is manifested by delayed differentiation of cellular unit structure. A familial history is of great diagnostic value.

The condition causes pain, hematuria, albuminuria and a palpable tumor. Ivelography shows the renal pelvis to be elongated but not dilated. The urine is abundant and of low specific gravity. At any time a fatal uræmia may develop.

The treatment is largely medical—regulation of the patient's diet and habits and the prevention of excesses and exposure. Conservatism is fundamental because surgery offers but little. Even the excision of the cysts advised by Rovsing seems a hopeless task. A stubborn hematuria may be checked by catheter drainage and the use of a weak solution of silver nitrate. Intensive necessary elimination is important.

The author's conclusions are based upon thirty-one cases of his own and four cases reported by Lowsky.

BENJAMIN F. R. LEE, M.D.

Thomas G. J. and Kinsella T. I. Some Data Concerning the Clinical Course of Renal Tuberculosis. *J. Urol.* 1928, xiv, 155.

The conclusions in this article are based on a study of about 4,500 urine specimens and 660 guinea pig inoculations. The material was obtained from a hospital devoted to the study and care of patients with tuberculosis in which each patient whose urine contains leucocytes, pus cells, numerous epithelial cells, or other pathological elements is put through the following routine.

The genitalia are cleansed and a voided specimen is examined. If the same findings are then made six specimens, one each week, are injected into the same guinea pig. Two of these are twenty-four hour specimens. Six weeks after the last injection the guinea pig is killed and examined grossly and microscopically. The same sediment may give positive findings in a smear and negative results on guinea pig inoculation. Large ureteral urines are carefully studied. Pyelograms are made unless contra-indicated.

Patients with extra-urinary tuberculosis may have a renal infection. An active early renal infection may be present without characteristic symptoms. The lesion may be so small that it does not appear in a pyelogram. With the healing of the lesion the urine may become negative. The kidney may become reinfectured or the original lesion may become active. The early non-destructive lesion is difficult if not impossible to diagnose.

The authors report three cases of clinically gross or destructive lesions which became quiescent under treatment with rest. In each case nephrectomy had been refused.

thorough inspection but the wound was closed from without. Suprapubic and urethral drainage was established. On the twelfth day urination was entirely normal.

The second case was that of a girl four years old who was also injured in an automobile accident. Physical examination revealed bruises in the region of both hips and slight bleeding from the vagina. The entire abdomen was rigid but the rigidity was most marked on the left side. There were no signs of free fluid or gas in the peritoneal cavity. A ray examination revealed a fracture of the right ischium without displacement. A catheter in the urethra drained only a small amount of blood fluid introduced could not be recovered. A diagnosis of extra peritoneal rupture of the bladder was made.

At operation there was no evidence of intra peritoneal injury. The preperitoneal tissues were suffused with blood. The bladder presented in the midline above the pelvic brim and the urethra was completely torn across just distal to the bladder. The internal sphincter was intact. The bladder contained about 60 ccm of clear urine. The vaginal walls showed severe lacerations a far as the cervix and the pelvic fascia was severely lacerated and bleeding profusely. The bladder was drawn down into position by means of a catheter introduced through the external urethral orifice and fixed with catgut. The pelvis was then packed with gauze and the wound closed. Convalescence was somewhat disturbed and on discharge from the hospital the patient had incontinence of urine. At another operation an attempt will be made to reconstruct the urethra by means of a plastic procedure.

CLAUDE D HOMES MD

Cybot H. Catheter Cystitis—A Misnomer. *J Indiana State M Ass* 1928 vii 1

The author believes that the technique of the surgeon and not the catheter is the essential factor in the production of so called catheter cystitis.

In cases of reflex retention of urine such as occurs after operation or severe injury catheter cystitis is of frequent occurrence. In such cases the reflex mechanism of the bladder is temporarily deranged and although the bladder is known to be uninfected and the urinary tract normal reflex retention and overdistention follow. The catheter is used and infection results in from 15 to 20 per cent of the cases.

An overdistended bladder furnishes a prepared soil for the growth of bacteria. Therefore overdistention should be prevented. The average normal capacity of the bladder is believed to be 10 oz. Routine emptying of the bladder should be done when this point has been reached. Of course this can be only guessed at but the surgeon should watch the second six hour postoperative period rather than the third and anticipate the development of overdistention. If infection occurs when this plan is followed it may be expected to disappear.

THOMAS I. FINEGAN MD

Ormond J. K. Diversion of the Urine in Intracutaneous and Incurable Vesical Tuberculosis. *J Urol* 1928 xiv 109

Four conditions in which vesical tuberculosis may resist local treatment to the extent that some form of operative intervention becomes necessary are: (1) bilateral renal tuberculosis, (2) tuberculosis of the kidney remaining after nephrectomy, (3) intracutaneous cystitis following nephrectomy with possible stricture of the orifice and hydronephrosis of the remaining kidney, and (4) advanced genital tuberculosis in the male.

The end results may be considered satisfactory only when the pain is relieved, the patient can be kept dry and free from odor, and the apparatus used is inconspicuous and easily applied.

The author mentions eight procedures but regards inguinal ureterostomy as the method of choice in most cases. He reports a case in which tuberculosis was found in the kidney remaining after a nephrectomy performed three years previously. The dilated ureter was cut across as near the bladder as possible and the end implanted in the wound in the inguinal region. Relief has been complete. Before the operation the two hour phthalan output could not be read five months after the operation it was 1 per cent. The patient's general condition has improved to such an extent that she is able to continue her work. The urine drains into a bag through a rubber catheter which is inserted in the wound.

Inguinal ureterostomy is simple, quickly performed and comparatively free from danger. The fistula is easy to care for.

In exceptional cases fowel implantation may be justifiable but is associated with much greater risk.

CLAUDE D. PICKRELL MD

Hager B. H. and Magath T. B. The Formation of Vesical Calculi. *J Am M Ass* 1928 xc 66

The authors report cases of urinary lithiasis in which proteus ammoniae was isolated and adduce evidence that under favorable conditions calculi can be produced in the bladder experimentally by means of proteus ammoniae. They suggest that a deficiency of Vitamin A may be favorable to the implantation of proteus ammoniae.

Kreutzmann H. A. R. The Cause of Renal Back Pressure in Obstructive Lesions of the Urethra and Bladder Neck. *J Urol* 1928 ix 199

The author reports investigations carried out to determine the cause of dilatation of the upper part of the urinary tract in cases of obstructive lesions of the neck of the bladder and the urethra in adults. Cystograms and pyelograms were made in cases of prostatic hypertrophy and long standing strictures of the urethra. The pathological changes and method of formation of organic changes in these conditions are practically identical. In some of the cases a marked thickening of the wall of the bladder was found. Great difficulty was experienced in

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GENITAL ORGANS

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b y t h a u t h o r a n l t h e t c h n i q u e f t h o p e r a t i o n

are described. The results in selected cases are reviewed and important factors in the postoperative treatment are discussed. The article is summarized as follows:

The cutting high frequency current in the form of the electrotome will efficiently cut through fibrous scar and carcinomatous tissue at the bladder neck. Fifty one patients have been relieved from bladder neck obstruction by this direct vision method. Two patients died of pneumonia and one of carcinomatosis. The current cuts instead of cauterizing hence there is no thick lough or secondary hæmorrhage. Primary bleeding has never been more than enough to make the urine pink or sherry colored with at times small clots. The procedure described is a minor one giving relief in major lesions apparently without grave complications. JOHN G. CHEETHAM M.D.

Hunt V. C. Posterior Excision of the Seminal Vesicles. *Ann Surg* 1928 1: 1111-5

The perineal route has proved satisfactory for the removal of uninfamed seminal vesicles but in cases of disease of the vesicles with a perivascular reaction the perineal exposure is not adequate for the complete removal of the densely adherent structures. Hunt believes that the indications for seminal vesiculectomy should be restricted to cases of disease of the vesicles that are not amenable to medical treatment.

In the operation for posterior excision of the seminal vesicles the use of sacral anesthesia and the prone position on the table with elevation of the pelvis are factors of importance for complete relaxation and adequate exposure. The incision is made in the median line and extended from about 2.5 cm. above the anus—or sufficiently far above the anus to avoid division of the anal sphincters—to just above the sacrococcygeal articulation. It is carried down to the levators ani and the latter are divided in the anococcygeal raphe. Lateral retraction of these muscles immediately exposes the rectum which is supported more or less loosely by areolar tissue. Excision of the tip of the coccyx facilitates mobilization of the rectum and the lower portion of the sigmoid by detaching them from the anterior surface of the coccyx and sacrum. It is emphasized that this procedure obviates the necessity for excision of the entire coccyx and for the higher transverse division of the sacrum which has been done in the more formidable methods of posterior excision of the vesicles.

The seminal vesicles are separated from the rectum in their lower third only by the retrovesical fascia. The reflection of the peritoneum covers the superior two thirds of the vesicles and is readily deflected upward after division of the retrovesical fascia. By mobilization and lateral retraction of the rectum and the lower portion of the sigmoid after division of the retrovesical fascia the vesicles are immediately exposed and their complete removal by visible dissection is rendered possible.

Extirpation of the vesicles may be accomplished with or without ligation of the vas deferens. However if there is a marked inflammatory reaction the vas may be divided. In the cases reviewed by the author there were no severe hæmorrhages and the moderate oozing which sometimes occurred was controlled by a light gauze pack left in place for several days.

Because of the accompanying perivesicular inflammation drainage was instituted in every instance. After removal of the vesicles the wound was closed by suturing the levators ani together in the median line. In every case healing occurred without disturbance of function of the levators or of the anal sphincters.

The author concludes that when the indications for seminal vesiculectomy are clear and based on definite pathological changes in the vesicles the method described is not formidable, obviates the danger of injury to the anal sphincters and facilitates visible extirpation of the vesicles.

Kilfoy E. J. Teratoma of the Testicle—Diagnosis and Treatment. *Clinical Medicine* 1928 11: 11-15

Teratoma of the testicle may occur at any age but is most common between the second and third decade of life. The average age of ten patients whose cases are reviewed was twenty nine and a half years. The tumor is potentially malignant to a high degree and the size of the primary tumor is no criterion of the duration of the lesion or the size of metastases. If carcinoma is present in a teratoma the prognosis is extremely poor. If the lesion is strictly a teratoma the prognosis is much more favorable.

Because of the difficulty in making a correct clinical diagnosis every questionable testicular tumor should be subjected to surgery and the tissue removed should be examined microscopically by a pathologist.

Teratomata are much more frequent than is indicated in the literature. The relative amount of blastodermic tissue varies greatly in different specimens.

The surgical treatment should consist in at least castration including removal of the vas and inguinal lymph nodes. Operation should be followed by X-ray or radium treatment or both.

When the patient is dismissed he should be instructed as to what to look for and to report for a check up examination every three months for the first year and every six months for the following five years. JOHN CROFT M.D.

MISCELLANEOUS

Bandler C. G. and Killian J. A. The Practical Value of Chemical Analysis of the Blood in Urological Conditions. *J. Urol.* 1928 21: 1-5

The authors made a study of 1200 cases of urological conditions from the standpoint of the chemi-

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SURGERY OF THE BONES JOINTS MUSCLES TENDONS

CONDITIONS OF THE BONES JOINTS MUSCLES TENDONS ETC

5th Ind CG The Differentiation of Otitis
Dermatologic and Otolaryngologic Metastatic Car-
cinoma. R. L. L. 1988

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**SURGERY OF THE BONES JOINTS
MUSCLES TENDONS ETC**

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In the operation described use is made of a spicule of bone about 3 in long which is obtained from the crest of the tibia. The condyles are denuded and the surfaces approximated. The picule is introduced into a hole drilled in the epiphyses of the tibia and the femur.

Gray has used this method for eight years and has had no failures from it. He has found however that the bone graft alone is not sufficient to cause ankylosis; denudation of the joint surface is quite essential. The risk of the operation is negligible. The disadvantages of a stiff limb appear to be small in comparison with the tedious expenditure of time required to put on and take off an appliance. The operation can be done without damaging the epiphyses. (JOURNAL OF CLINICAL MEDICINE)

FRACTURES AND DISLOCATIONS

Hey Groves E. W. Damages to Bones and Reparatations. *Lancet* 1945, 1, 10.

The author reviews 100 consecutive cases of fracture in which primary treatment was carried out with unsatisfactory results. He classifies them into groups according to the bone involved and discusses the factors responsible for the poor results.

In the cases of fracture of the humerus consultation was most often sought because of non union or the complications of an ineffective plating operation. When the fracture was in the upper portion of the shaft near the tuberosities joint dysfunction was the most frequent difficulty.

Among the cases of fracture of the elbow there were two in which a fracture of the olecranon had been overlooked and stretching of the fibrous union had occurred. The other cases in this group were cases of fracture of the lower end of the humerus in children and young adults which had resulted in more or less stiffness of the elbow and in three instances had led in addition to chronic contracture.

In most of the cases of fracture of the radius and ulna the complication was displacement of the shaft of the radius toward the ulna so that the hand deviated toward the thumb and supination was lost. Of this group five were cases of fracture in which some form of operation had been performed unsuccessfully.

In all but one case of Colles fracture deformity with loss of function had resulted from incomplete reduction of the displacement.

In the fractures of the neck of the femur difficulty resulted from non union, painful fibrous union or mechanical coxa vara. In the cases of fracture of the shaft of the femur consultation was sought because of sepsis, malunion or complications of plating operations.

In the cases of fracture of the tibia and fibula the difficulties were due to malunion, delayed union, non union or compound fracture.

In the cases of fracture of the ankle the poor result was due to incomplete reduction which caused

valgoid deformity of the foot and a painful and stiff ankle.

Fifty leg fractures are grouped according to the bones involved. With few exceptions the alleged negligence consisted in failure to employ the X-ray in the diagnosis and treatment.

The author emphasizes the importance of making a critical examination of the fracture within a week or ten days after it is put up in order to obtain absolute proof regarding the contact and alignment of the bone. He suggests that in rural districts a mobile X-ray plant be provided.

Emphasis is placed upon the unfavorable complications resulting from plating operations in which the plate or screws fail to hold and especially upon the danger of plating in cases of compound fracture. For very few cases result from the plating of open fracture, there are many more failures.

The chief factor in successful treatment is simplicity. The bones are displaced by the original violence by gravity and by the pull of the muscles. The first essential in reduction is efficient traction in the axis of the limb. Therefore every practitioner should master some method of applying such traction. (JOURNAL OF CLINICAL MEDICINE)

Werenskiold B. A Contribution to the Roentgen Diagnosis of Epiphyseal Separations. *Acta Orthopædica Scandinavica* 1945, 14, 49.

True separations of the epiphysis without displacement can be diagnosed from the detachment of a thin lamella from the epiphysis. This lamella lies in the interstice between the epiphysis and the diaphysis and is found in 53 per cent of mixed epiphysal separations.

True separations of the epiphysis are by no means rare; they constitute 10 per cent of cases of epiphysal separations. They are most common between the ages of ten and twenty years.

Robert E. L. The Treatment of Ankle and Leg Fractures by the Delbet Ambulatory Plaster Splint. *British Medical Journal* 1945, 2, 44.

The ambulatory treatment originally described by Delbet has been adopted by the author for the treatment of fractures of the ankle and certain fractures of the leg. The technique including the making of the plaster bandages is described in detail and eleven cases treated in this manner with very satisfactory results are reported.

Weight bearing may be allowed within three or four weeks. The plaster is changed whenever it becomes too loose. Motion at the knee and ankle is free throughout the treatment. The use of the Delbet plaster shortens the period of treatment and renders unnecessary the tedious and expensive course of physiotherapy required by other methods.

In leg fractures the transmission of the full weight through the site of the fracture which is made possible by the use of the Delbet plaster stimulates the rapid formation of strong callus.

ROBERT A. FULSTON, M.D.

SURGERY OF THE BLOOD AND LYMPH SYSTEMS

BLOOD VESSELS

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pa t of the blood nto th ve n

AU REY G M RGAN M D

M cquot P A te nous Aneu sms (S l
a e m t e o e e) B l l t l S
i d h 9 7 l 15

Th autho agr es with Moure that n cases of
ascula njy es it is often bett r to delay operatio
until after the occurrence of c catr ati n and th
fo mation of an aneur m prov ded th re is no gross
haemorrhage a d no f reign b dy n ar the ve el
Il note how v r that Mo r does not mention
through an l through perforation of the artery
Mocquot h s s en two cases in wh ch th artery
show d a double pe fo t on nd f a conerva
t ve operat ion it wo ld h ve b n n cessa y to
re ect the v ounded part of the artery and re e t
lish ts cont n ty by circula suture He l g t d and
e ti p ted only the unded segment and both of
the pat ents recovered

Mocquot believes that Moure attributes too much importance to the sac in arteriovenous aneurisms since it is only because of clinical analogy that an arteriovenous aneurism is called an aneurism. From the standpoint of anatomy and pathological physiology an arteriovenous aneurism is very different from an arterial aneurism. In the latter the sac is essential but in an arteriovenous aneurism the communication between the artery and vein with the short circuit of the circulation is the important factor. The sac cannot be used to repair the artery.

The article contains the reports of two cases of gunshot wound in which because of difficulty in localizing the lesion it was necessary to operate several times for recurrent aneurism. In the first case there were two arteriovenous communications—one in the femoral and one in the circumflex vessels. Mocquot describes also an operation in a case of arteriovenous aneurism due to a stab wound. He concludes that extirpation is not the ideal method for arteriovenous aneurism; it is at least the procedure which is most frequently indicated and which gives the most constant results.

AUDREY G. MORGAN, M.D.

Lecene Arteriovenous Aneurisms (Sur les aneurismes arterio-veineux) *Bull. et Mém. Soc. Chir.* 1927, lxxv, 198.

The author discusses the treatment of arteriovenous aneurism, particularly those which occur close to the trunk on the extremities. When an aneurism is situated distally, hæmostasis is easily effected by the method of Matas, i.e. by placing an Esmarch bandage around the limb distal to the lesion and a tourniquet proximal to it. When the aneurism is higher up this method cannot be applied and some method of temporary ligation, as with a red rubber tube (Nulaton), is recommended. The Matas method is non-traumatizing and efficacious.

Lecene reports two cases which were treated during the war. The lesions were almost identical, both affecting the femoral artery in Scarpa's triangle. First the external iliac artery was exposed and hæmostasis secured by means of a small rubber sound. The aneurism was then exposed and the vein opened up so that the communication could be explored with the view of lateral suture of the artery. The hæmorrhage was so great, however, that this course was abandoned and a quadruple ligation of the vein and artery close to the fistulous opening was performed instead. Numerous enlarged veins draining into the femoral artery also required ligation. The second case was analogous to the first except that it had been operated upon previously and the ligation had been performed too far away from the site of the aneurism to effect a cure.

From his experience the author concludes that in young persons there is no danger of circulatory disturbance in the extremities following quadruple ligation. Attempts to save the main artery are time-consuming and carry with them grave danger of secondary hæmorrhage. If a direct and accessible communication is found, lateral suture of the arterial

wall may be justified. Ligation should be made as close to the aneurismal communication as possible. It is not always necessary to expose the vessels to the periphery; in some cases the lesion may be closed by whipping it over with sutures.

MICHAEL L. MASON, M.D.

Yater W. M. Acquired Arteriovenous Fistula (*Les fistules artérioveineuses acquises*) *Bull. et Mém. Soc. Chir.* 1925, lxxviii, 19.

Yater reports four cases of acquired arteriovenous fistula. In three cases a determination of the oxygen content of blood taken from a vein in the region of the fistula revealed the presence of arterial blood in the venous channel, as would be expected. This result suggests it as a pathognomonic criterion in all cases in which there is doubt as to the presence of an arteriovenous anastomosis.

Leriche R. Traumatic Arteriovenous Aneurisms of the Limbs (Sur les aneurismes artérioveineux traumatiques du membre) *Bull. et Mém. Soc. Chir.* 1927, lxxv, 39.

Leriche noted the exact situation of the lesion in only five of his nine cases of traumatic arteriovenous aneurism. He found that the arteriovenous fistula occurred instantaneously at the time of the injury. In some instances there were dilatations of the vein. In the one case of arterial dilatation the elastic fiber had disappeared in the greater part of the arterial pocket and the muscular fibers were paralytically.

When the sac is formed secondarily at the expense of an encysted hæmatoma it does not take long for the formation of an arteriovenous aneurism. Leriche has seen complete endothelialization after fourteen days. He is of the opinion that the connective tissue proliferation which welds the artery and vein together is due to transformations such as occur in all traumatized connective tissue. If operation is not done within the first few days it should be deferred for two or three months.

In his nine cases Leriche obtained excellent results from resection of the fistula with quadruple ligation. He discusses the immediate secondary and remote phenomena following experimental arteriovenous fistula and reports a case of arteriovenous aneurism of the femoral vessels with considerable cardiac reflux, cardiac resonance dilatation of the heart and a murmur. The aneurism was cured and there was very slow diminution in volume of the heart, but the murmur still persisted after six months.

ANNA J. FACE

Auvray The Treatment of Arteriovenous Aneurisms (A propos du traitement de l'anévrisme artérioveineux) *Bull. et Mém. Soc. Nat. de Chir.* 1922, lxxi, 56.

The author has treated nine cases of arteriovenous aneurism. In one the procedure consisted in supplantation of the communication and lateral suture of the artery. The result was very satisfactory. In the eight other cases of war wounds—the complexity

Moszkowicz combines it with vasoligation. The injection and ligation are carried out at the highest point of the dilated vein usually on the upper third of the thigh. However ligation is high as the level of the opening of the vein saphena into the femoral it is avoided whenever possible in order to keep the patient ambulant.

After a careful study of the venous condition has been made with the patient standing a spot is chosen for the injection and marked by scratching with a fine needle. Disinfection is carried out with benzine and tincture of iodine and a local anesthetic is injected about the area. Following exposure of the vein a double ligature is placed around the vessel but only the upper strand is tied. Then 10, 30 or 40 c cm of the glucose solution is injected. The wound is closed with Michel skin clamp and a small dressing is applied. After the injection the entire limb is encased in a rubber bandage.

If the vein saphena magna forks below the point of the ligature on the thigh 20 c cm is injected into each branch. Moszkowicz add $\frac{1}{2}$ drop (not more) of suprarenin to the solution.

At the moment of injection many patients experience cramps of the calf muscles but these tend to subside after a few minutes. Some patients feel a drawing in the leg for a few days and prefer to remain in bed while others walk about undisturbed.

Among 150 cases receiving this treatment there were 3 cases of reaction central to the point of ligation but without any tendency of the process to progress farther. The reaction caused by the injection regresses as a rule in two or three weeks. After four weeks the patient is able to resume his usual work. No instance of embolism has been noted. In one case a periphlebitic abscess developed beneath the point of ligation.

Moszkowicz performs this operation only for markedly developed varices in persons doing hard physical labor.

The presence of an ulcer is not a contra indication but an attempt should be made to have the ulcerated area in a clean fresh state before the operation is performed. The ulcer tends to heal rapidly following the injection. Recent active thrombosis or phlebitis is a contra indication diabetes demands caution.

Moszkowicz is unable to report the ultimate results in his cases as all of them were treated recently. The method is unsuitable if the dilated veins form a network encompassing the leg. For such cases Moszkowicz recommends the Rindfleisch-Friemel spiral incision with ligation or evulsion of the involved veins. The wound is closed with Michel skin clamps in order to promote the development of cicatricial tissue. STITTNER (7)

Cantelmo O. Fulminant Postoperative Embolism (Le embolie post-operative fulminante). *Riforma* 1927 XLII 1120

The author briefly reports five cases of fulminant postoperative embolism. The first was that of a

woman fifty five years of age who had her right breast amputated under chloroform anesthesia and on the morning of the sixth day was found dead in bed. The second was that of a woman of forty six years who was operated upon for a cyst of the ovary and fell dead on the fifteenth day when she started to get up for the first time. The third case was that of a man fifty nine years of age who was operated upon for stenosis of the intestine due to a tumor. On the tenth day the patient fell dead while sitting up in bed eating a meal. In the fourth case that of a woman of twenty years who was operated upon for appendicitis died from probable cancer of the head of the pancreas death occurred on the fourth day during an attack of syncope.

In four of these five cases there was no inflammation it is evident that embolism may be aseptically well accepted. The primary factor bringing it about is the first rise of blood pressure from effort after the postoperative rest. There are three forms—the venocapillary form characterized by acute suffocation and the form characterized by a phlegm. In the venocapillary form a large embolism in the right heart causes reflex paralysis in the two lower limbs the emboli may occlude a large branch of the pulmonary artery. The embolism is always preceded by an evening rise in the temperature—the sign of Michaelis or a pulse rate up to 110-120 with a normal or slightly subnormal temperature—the sign of Mahler. In the author's opinion the sign of Michaelis indicates bacterial embolism and Mahler sign aseptic embolism.

In the cases of patients with a weak heart or anemia and the cases of all persons over forty years of age operation should be preceded by the administration of a heart tonic and alkalization of the blood and should be done under local anesthesia. The patient should be kept at absolute rest for as short a time as possible and slight massage of the lower limbs and respiratory gymnastics should be begun on the first day after the operation. The lower end of the bed should be lifted about 15 cm. At the first sign of fever or tachycardia the patient should be put at rest again and should be kept at rest until about a week after the cessation of the fever or tachycardia. METZGER AND MIDD

Key E. Embolotomy as a Method of Treating Embolic Functional Disturbances of the Extremities (Ueber funktionelle als Behandlungsmethode bei embolischen Funktionsstörungen der Extremitäten). *Zentralblatt für Chirurgie* 1927 L 219 2249

Key believes that the Trendelenburg extraction of pulmonary emboli is not of great practical importance as there are few cases in which it can save life. In the extremities however embolotomy has a better prognosis. Key has collected a total of ninety five cases from the Swedish literature and states that the number is increasing every year.

Emboli usually occur at points of branching of an artery such as the bifurcation of the aorta and in

c m m n l a f m l a n l p l t e l a r t e i c s a n l t h e
p t t h i l l a r t r h r e t h u b c i p l a r
f a n h g f i m b l t h e x t m t e m y
b p c c l l e m b l t h e n t e r n l o g u n s a n d i n
m e a m t c a e o m p l t b t r u t i o n
f m t l h f l t d t h e p e p h e v
b t t m t n t a l n a c e n t p a l d i r c t n
T l l h f g i g r i a n d b e o l a y
t h m l u f t n n i t h d a g f c o n d r
t h m l u t m t u a l l y g t r t h l n g t h
t m t a t h l p l i u n t h l w p l u g l
t h t h b l f l i n t f t h a t h r t n d l
l h g l p l n t o s l f o n t h l l t l
u l t i f a l p t h i l p t u c f
t h n b l t h l t f t h l a l l a n d
t h r f l v t h m b f m t
D g l i t r y m i f t t m y t
l l l b l l a n l t r a l
f l l u f t t l l a t r l l t i
l l p
t h l t m a t i f t h t f m l l u
t t l t m f l t l b t h f l m t h f i t
t t m b l u u l l f l a t h b f a t n f
n t v a l p u l t t h v a f u l t
l t l a s W h t l f l e k t h f o b l m
l l l y l f l t
t h l t t d g t n f a m
t l n b l u r u l l n r p i a t n
l u m t l l a n l m t t u l t v
h t l a s I n a n h h t l b l k i g u
g r a l l a t h l t h m l s n l v t o
m b l h h t f t d i n t m p l t
b t t h l g m t l u c u l t A f t a
f l m b l t m s m a l l t h r m b p l
h g t h f p h a l e l m a u
t h v l t u l a n
W l e i l l t h t a t h u l d b p
f m l u l l a l a n a t h a p t t h t h
m b l u u l l f i n g f m f r m f h t
l v t t h n i q f t h g t t i m
p t t h b e t s t u r t h n p u t a t f
C l n w h h v t h n l d v f n l k
t l d n a l n c r u e l I K v a m
f t t h p r e n t d u m c t t u l
d t h i t u m n t a n d g l o v k p t h e f n
t h l t n u t t h a r t e r i l l l o s d T h e
m f h u l d b e x p o d n o t I n t h e g e o n
o f t h m b o l b t l o t o r s o m d t n b e y l
i t l i k e t h d j e n t b r a n c h n d t a t
l a m p o r l i g a t u m b p l a d n h l t h g
t o p v n t r t r o g r a i b l d n g d u r i g t h u t u n
o f t h l B f t h a t r i o t o m t h l
h o l d b l e l f i p m l l b t c c o n t o f
t h d g f e l r t h m t o i s n d t l l y
A r t r i o t o m y b t b g u a t h p p r d o f t h
e m b o l t u f t l t i n e f m t h e p n t o f
b u f e r c a t i o n f t h l t p r n t s e o n d a n
r o v i n g a f t r t h t u a l l y t h e m b o l u s l i p
o u t e a l t h u g h t h t o t m y u d d i f i t
l e o t i t n v b m d w i t h t d f f o r c p
o a b l u n t s p b t g r a t c r m u t b e t k n n o t
t n j u t h n t m a R m a n n g p a t c l e s m a y b e

removed by gentle massage It is absolutely nec s
sary that all of the embolus be remo ed In cases of
v e y l o n g t h r o m b i B a b c o c k s o u n d m a y b e e m
p l o y d t h e t h o m b u s m a y b e m i l k e d o u t o r w a s h e d
o u t b y t h e b l o o d u r r t T h e a p p l i c a t i o n o f a c l a m p
t o t h e p e p h e r a l p o t i o n o f t h e e m b o l i z e d a r t y
i p e r m i s s i b l n l y a f t e r t h e c o m p l e t e r e m o v a l o f
t h e p r i m a r y a n d s c o n d a r y t h r m b J u s t b e f o r e
t h e s u t u g f t h e e s s e l t h e c l a m p o n t h e c e n t r a l
p o r t n o f t h e e s e l s h o u l d b e m o m t a r i l y o p e n e d
t o d e t e r m i n e t h e t h e b l o o d p a s s e s f r e e l y C i r
c u l t o m a y b e a l l o e d a f t e r t h e e s s e l h a s b e e n
s u t u e d a n t h e r e m n t o n f o r e m b o l i c m
t e r i l h s p d n t i e I f a n o t h e r e m b o l u s i s
d i c e d a s e c o n d a r t e r i o t o m y m u s t b d o n e

F o r t h m a l o f m b o l i n t h e l a r g e v e s e l o f
t h t u n u h a t h a o r t a o t h e c o m m o n i c
r t u t h t h m b e x t e n d i n g i n t o t h e v e l
f t h t h h r t r g r a l s o u n d i n g a n d m i l k i n a r e
m m n l d T h c t r a l m b o l h a e a n u f a
o b l p r g b e u o f t h e v e r e s t r a n t h e y
p l i c p t h e a r t (Wiedhopf)

K v c l l h i a r t l i t h a s t a t i c a l r e v i e w
f h a L o e (2)

M y A W A S u c f l T d l n b u g O p e r a
t n f o F m b o l m f t l P l m n r y A r t e y
(l l l h f l l b g h O p t b
L l l l A t p l m l l) D t l Z l
l c l o

I h a u t h r p t t o c a s e s i n w h c h e m b l
r u f i l l r m d m o n t h e p u l m o n a r
a t r y O t h f t a t i n t s r m u n e l u r e d T h e
o t h d t h f t m b l e c t o m y b u e d f r o m
a s c l p u l m a r y m b l u t i n t v f a y l t e r

T h a u t h o r p t e t e h q u e s s e n t i a l l y
s m l t t a t f t h c l a i c a l T r e n l l e b r g o p r a
t H o t l f t u a r e n d l o e s o
t h t h t r a n n c a n b e m a d e i n t h e
o l n t p T h o n d a n d t h d r i b s a r e

t d t t h t o h o n l r a l j u n c t i o n O p e n i n g
o f t h p l u r a l a r t y a o l d i n o r d e r t o s p a r e t h e
p a t n t f r t h h k T h a t h o r m p h a i z e s t h e

a l u f i n t m t t n t n t r r p t i o f t h c u l a t i o n
h h r l t h e a r t a n d a t r a l n e r o u s y s t e m
o f t h s t r a n f a l o n g p o d o f b l o o d d e f i c i e n c y
D u n g t h n t e l i n w h i c h t h e m b o l a e b n g
l o c t d n t h p n n g o f t h p l m o n r y a r t e r y
t h l t n t h b l d v e s e l i s h e l d c l o e d b y t h
t h u m b n d i n d f i n g h e n t h e c o n s t c n g r u b
b e r t u b l o o s e d I n p l a c i n g t h r u b b e r
r d t h l a g e b l o o d e s s e n c i a l b r a n c h e a s m a l l e r
m d l f t h T n i l e b u g o u n l u d

A f t a r m b l s h b n e m o d t h o p e n i n g
i n t h e b l d l a r e f l l y d b y m e n s o f
i n t u p t d u t e n i t h b l o o d s s e l c l a m p s a r e
p u t p l c T h s i m p s d i f f e r f r o m t h o g n a l s
n t a t t h v a s a m l l r c u v e a n n o r e
b l a d e s t h t n h t h v a h o l d n g a l o n g
n e o n t h a d j c n t c i r c u l a t i o n i s n o t i m p a r e d
T o p n t s l i p p i n g f t h i n s t r u m e n t t h e b l a d
a r c o e d i t h g a u c n s t e d o f u b b r

The author believes that carbon dioxide inhalations are of great value in quickly stimulating respiration especially in cases of severe respiratory failure

JERN (7)

Pearse H E The Immediate Effect of Arterial Ligation on Experimental Study 1 *J M Sc* 19 8 clxxx 49

In a study of the results of ligation of large arteries upon the arterial and venous pressure and the size of the heart Pearse found that the arterial pressure was increased proximally and decreased distal to the ligature and that sudden occlusion of the aorta produced cardiac dilatation and pulmonary oedema He suggests that in arterial disease of the extremities the elevated proximal pressure may be a factor in the dilation of the collateral channels and the maintenance of viability of the peripheral part

RICHARD I HERN N MD

Stern W G The Saline Wheel Test as a Measure of the Blood Supply in Arterial Disturbances of the Extremities *Ohio State M J* 9 4 x x 1926

Up to the present time but few good and practical agents to measure the circulation in the extremities have been devised The calorimeter is the most accurate of these but is susceptible to external influence and is not suitable for hospital or office use The hypodermic pyrometer of Brooks is useful but often inaccurate and requires puncture of the skin The oscillometer of Fachsen seems to be reliable but is often out of order

Following the work of McClure and Allrich the author has devised the following method

By means of a tuberculin syringe and a very fine needle 0.2 cm of an 0.8 per cent saline solution is injected intracutaneously The eye of the needle should be visible through the outer layer of the skin when the injection is made The first injection is made at the base of the great toe and similar injections are made at 4 in intervals up to the leg and thigh The sense of touch is used to determine the disappearance time as the vasomotor changes produced by the injection often render visual judgment unsatisfactory Normally sixty minutes or more is required for the complete disappearance of the wheal produced by the injected fluid though at the base of the great toe readings as low as thirty minutes have been considered normal (one such reading was made in the case of a patient without clinical evidence of vascular disease) In cases of circulatory disturbance the disappearance time of the wheal is reduced to one third one fourth or even one twentieth of the normal

From a series of 100 cases in which the described procedure was used the following conclusions are drawn

1 In the absence of oedema the intracutaneous salt solution test is a simple rapid and accurate method of determining circulatory deficiencies in the extremities

Sixty minutes or more is the normal disappearance time of the salt solution

3 In all instances in which clinical circulatory deficiency exists the disappearance time is diminished in the area just above the site of gangrene (existing or threatened) it is frequently as short as five minutes

J HEN J MALONEY MD

BLOOD TRANSFUSION

Bourde Y Zucarelli J and Duval P Chronic Recurrent Hemorrhagic Purpura Splenectomy Recovery (Urgural m rrahagique rec 1 nt hr ique plenectomie gucr son) *Bull et* 5 at d 1 1 1 106

The patient whose case is reported was a woman twenty-four years of age Two of her sisters had died from hemorrhage at the ages of nineteen and twenty-two years The patient's first hemorrhage occurred following a slight traumatism sustained when she was four years of age Since then she had had numerous spontaneous and traumatic hemorrhages into the skin and from the mucous surfaces Tonsillectomy and appendectomy had been performed without undue bleeding but following the extraction of a tooth the gum had bled for three weeks Her hematoma is brought the patient to the hospital in coma

Examination of the blood revealed a moderate degree of secondary anemia a normal platelet count and slight prolongation of the bleeding and clotting times The Wassermann test was positive Specific therapy and various intravenous and hypodermic injection produced exacerbations of the bleeding Pain developed in the left hypochondrium and the spleen which formerly could not be felt became palpable Splenectomy was followed by apparently complete recovery The histological findings were thought to indicate Weil's disease

LE M ZIMMERMAN MD

LYMPH VESSELS AND GLANDS

Dunham E C and Smythe A M Tuberculosis of the Cervical Lymph Nodes in Infancy The Value of the Roentgen Ray in Its Diagnosis 1 *J D Child* 19 7 xxxi 97

When cervical adenopathy was observed in children it was found that roentgen ray examination was most helpful in determining whether the infection of the nodes was tuberculous

X-ray plates showed calcified nodes in two cases of infants aged five and seven months a period of life in which tuberculosis of these nodes is regarded as rare

ROBERT M GRIER MD

SURGICAL TECHNIQUE

OPERATIVE SURGERY AND TECHNIQUE POSTOPERATIVE TREATMENT

Fa n G M ard T ra a L Facto s Dete
m n u g the Resi ta ce of the Pat ent and
Decre sing the Risk of Oj rat on (E m t
p l t l t t a d l p a d l m
l p t) R f r d o 7 l 37

Th f n l a m t a l factor d t r m n n g th re
t u n of th pati n t t l f o u n d n h s b l o g
c l a n l f c t i a l n l t o To a c r t a n l e g c
h a b t u s a n i n l e f f u n t i o n I s o n s f t h e
m e g a l p l n l t v l i t n f r q u n t l y s f i e r e
r i o u s p o t o p r a t i v m p l c a t i o n A o t h r f a
t r i n c i n g t h k f o p r a t i o n i s o b s i t y I n
t h e c c o f a n o b e i a t e n t a n e f f r t h o u l d b
m a l i f p b l t o d c r s e t h e w e i g h t a n l m
p o v t h e m e t a b o l i s m a n d c i r c u l a t i n a n l r e s p i
t i o n b e f r e o p a t i n i u n l r a k n O f t h c h a g s
i m t b l i s m t h m s t s e i o a r t h o s e l i n g t
t l a b t s

I t i m p t a n t t o r t a b l h t h e a c i d b a c e q l b
m o f t h b l d b f o o p r a t i o I a c t e a n l
h r o n i l i f t h e k l n v d i a b t p r l o n g e l
n a t i r t n l i e d i a s f l o r i d r k t s l u
k e m i c r t n a n e m i a l r o u n f t o n t h
t i a n l s h c k t h l k a l r e o f t i
d c a l

A t h r f a t f i p r t n l t r m i n g t h
r k f p e a t i o n i s t h c o n d i t i o n o f t h c i r l u t o
v s t m C o m p n a t e l v a l l e s o s a e i t i n g
u b u t t a n t r r h t h m i a a n l a c l a f b r l l a
t i g r t l i a e t h e o p a t v s k I n d t r
m m i n g t h f c t n l a p a c t v o f t h b t i t m
p r t a t o k o w t h p r o p t i n f t h o l u m o f t h
h t t o t h a t o f t h b o d y a s a h o l t h e p o r t i n
f t h l u m f t h g h t h a t t o t h a t f t h l f t
a n l t h p r o p t i o n o f t h l u m f t h a o r t
t h a t o f t h h a r t I n a s s f o m p n s t e l h y p r
t o n o p r a t i o n n o t c o n t i n l t e d f t h
k d n c f u n t i o n g o o l T h c h o i f u n a t h t i c
f p n d u p n t h l a t t I n m p t d h y p o t n
v a t h c h e o f a n a t h t p d e p n l o t o l u p o
t h l g f t h l f t h l p s u r b u t a l o f t h
o n l t o n p o n i b l f o r t G r t a u t i n h u d b
v e r c i l n o p a t n g i a s f d o m p e n s t l
h y p t i o n o h y p o t n o n s a d e r a i t h e
d i f f e t i a l p e s s u r i l a t s i m p a i r m t o f h r t
f u n t i o n

A s g n e a l r u l p r a t i n i s o n t a n l e a t d i f
t h e h a e m g l o b i n l o r t h a n 30 p e r c e n t a n d t h e
r y t h t e o t l e t h a n 30 / m i l l i o n W h e n
t h e h a e m o g l o b i n i s l s s t h a n 50 p e r c e n t p r p a
t i v e t r a n s f u r i o f b l o d i s i n d c a t e d

T h e k i d n e y f u n c t i o n s h o u l d b t e s t e d b e f o e o p e r a
t i o n b y t h c n e n t r t i o n a d d i l u t i o t e t d e t e r

m i n a t i o n o f t h e b l o o l u r a a d A m b a r d s c o n s t a y
a l t h p h n o l p h t h a l e i n t e s t

L i v r f u n t i n t e s t a e l s s c o m m o n l y a p p l i
t h o u g h e q u a l l y i m p t a n t L i c r f u n c t i o n m a y
l e t e m i n e l f o m t h b i l r u b n a m i r o i c t e u s n d e
L a b b e a i m t a v g l y c a m i a t s t t h e a m m n
c f l i n t (H a s s l b c h) K o s e n t h a l s t e t
t e t a b r o m p h n l p h t h a l e i n n d c h r o m o c h o l o s c o p
I n t h e i m p r o c e m e n t o f l i v e r f u n t i o n g l y c o g n e
i s o f t h g r a t t i m p o t a n c e T h b s t e n e r g
m e a c i t h l i r t a d n i s t a t i o o f s u g a r i n t
f o r m f g l u l u t o n

A t g l (M R M D

S t t o n H B I n d e q a t e S k n P r p a t i o n s
C u s o f P o p r a t e W o u n d I n f e t i o
V l E S t J M q 8 9

I n S u t t n p n n i a d q u a t e p r e p a r a t n
t h e k n i t h m o s t p r b a b l c a e o f p o s t o p e r a t i
o u d i f c t n a t h o t h r s t p n o p e r a t i
r o o m t h n i q u m a y b l i c t r o l l e d W h e n t h
s k n i p r p r d t h g r t e r s f o r b n e a
j o i n t k i n f e c t i e l l m d v l o p

T h f a c t t h t h e s k i o n t a m n a t l h a s b
p r l b y b a t r l o g l t l y o f x i s d i s p e c t i m e
A o u s i n t i g t r h a c f o d t h a t w h n t h
s k n a p p r d t h i n f r o m 5 t o 1 p
c e n t f e v e r d p e c m n f t h k n v l d e d
g r o t h o b a t r i a o n l t r A c o n d i n g t o C o l
t h m d n c o f p o p r a t v n d i n f e t i n
l w n p r p a r a t i n f t h k n i t h o d i i
p e r t i l n k e a n l S u t t n f l t h a t e
v h t h k i h a d b e e n p r p r e d v i t h H a
t n o l t a p o s t i o n u l t a o b t i e d
p r e c t n i n f i n t i o n f t h e o p r a t i c o u n
o c u r r d n p e r n t h r a s i a s i n w h t h
k n h a d b e e n p r p r l t h a d a v i n t h e
i n f t i r p t i c u l t u r

M M x M D

G r n e i n A A n u d M a n d F l o n I
A z o t a e m i a n S g r y (R h h l t m
h h) J d f 9 7 394

O p r a t n h o l l n t b p r f m l t n t h
l l i s a b o n o m a l (0.45 g m p o c
m) 75 n t o g n t n t i l a t p o f c i o
o f t h l i e n l k i d n e h h i l l p r o b l y m a
t h e d e l o p m n t o f h p a t e l o m p l a t i n s a f t e
p a t i o n

T h e a u t h r d t r m n e l t h b l o d u r a 3
p a t i e n t s w h o r e t n l r g o s u g a l o p e a t i
T h l e t r m u a t n s e m a l b y t h M o o
m t h d I n 34 c s s t h m u n t a e q u i l t o
a b o 0.45 g m p l x 1000 c m A m o g l t 73
c a s t h r e 4 l a t h s f r o n a r i o m p l c a t o n
b u t n o e d u e t o r a l s u f f i c i e n c y I n o m e c a s

the blood urea ranged from 0.70 to 0.80 gm per 100 c cm.

There are cases (the authors report) in which when the blood urea is normal before operation phenomena of severe renal insufficiency appear after operation. Therefore the prognostic value of the pre operative blood urea values seems to have been exaggerated. Determinations of the blood urea should be supplemented by Ambard's constant and the phenolsulphonphthalein test. The authors prefer the latter.

An increase in the blood urea is a constant phenomenon after operations. It reaches its maximum on the third or fourth day and descends by half in eight or ten days usually without clinical symptoms. The urea retention before and after operation in 66 cases is shown by the authors by means of graphs. Some surgeons attribute postoperative hyperazotæmia to the anæsthetic but the authors do not accept this theory since in 8 cases in which anaesthesia was not followed by operation there was no nitrogen retention and in some of the cases in which operation was performed later the blood urea was increased after the operation. All methods of inducing anaesthesia cause a transitory increase in the blood urea after operation even local anaesthesia. Traumatized patients who have not been anesthetized also show nitrogen retention.

Urea secretory azotemia is the expression of a disturbance of the excretion of urea in the kidney due to an alteration in the renal parenchyma. The urea secretory function remaining the same before and after operation it cannot be responsible for postoperative nitrogen retention.

The oliguria occurring after every operation has been considered a cause of increased blood urea. The observations reported in this article seem to show that the blood urea curve rises the volume of urine decreases and the concentration of urinary urea increases. Oliguria does not seem to be the cause.

The factor essential for nitrogen retention is resorption of the elements of the cells and tissues killed by the trauma of operation. This accounts for the nitrogen retention following trauma and curietherapy. An operative procedure such as the transfusion of citrated blood which is not accompanied by disintegration of the tissues or by resorption is not followed by an increase in the blood urea. Postoperative leucocytosis may contribute to the causation of nitrogen retention.

Walter A B Denuded Surfaces Treated by Tannic
Acid *Canadian M 135 J 192 xvii 1517*

Walter recommends the use of an aqueous solution of tannic acid not only for burns but also for surfaces denuded by other traumata. He reports two cases in which it gave good results. The method is of value from the standpoint of simplicity, comfort, freedom from painful dressings, quick healing and lightness of the scar.

MERLE P. HOON, M.D.

Figure J 1 The Mikulicz Drain (La Mikulicz)

In a long time I have been advocating the use of Mikulicz' train in peritoneal infections. It was then practically as it applies to intestinal ulcers, a little opposed for a time, but a large number of my patients have now become convinced of its value.

It is called by its popular name Mikulicz
fungus but it was first described by
Dr. Mikulicz.

In mentioning a Bill of report of forty cases of pyelitis treated by appendectomy with a pyelotomy of the abdomen without a single death, that the conclusion must have been in the favor of the little with little or no infection of the pyelitis. He is in agreement with those surgeons who believe that simple pyelization is sufficient to remove infection. He has found that a dry Mikulicz drain through the capillary drainage tube that is connected with a valve

MURRAY M. RAN M.D.

Johnson S S Chronic Postoperative Tetany

Jack reviewed the growth of our knowledge of the functional function of the parathyroid gland from W. H. R. (1913) to the parathyroid gland in 1981 at the work of H. W. and J. Marriott in 1918 which demonstrated that convulsions develop when the calcium in the blood becomes less than 7 mgm per 100 c.c. of serum.

The incidence of postoperative tetany has been markedly reduced by the radical type of thyroidectomy that necessitates obtaining a cure and prevent the recurrence of tetany. The cause of the tetany is operative trauma to the parathyroid gland or interference with the blood supply of these gland by ligation of the lymphatic and scar tissue.

The symptom may be acute or may not develop until several months after the operation. In some case they may be atypical. The classical signs of the condition are a decrease in the calcium content of the blood and the signs described by Trousseau, Chvostek and Erb. Tetany has no effect on the basal metabolism.

The two agents that have proved most effective in the treatment are calcium and parathormone. Neither however will cure the chronic type of the condition. Jackson gives calcium lactate orally or intravenously or Collip's parathormone intravenously. The transplantation of parathyroid glands has not proved generally effective because of the difficulty of recognizing the gland at operation. One of Jackson's case was markedly benefited by ultra violet light but the time that has elapsed since the treatment has not been sufficient to determine the ultimate result. Parathormone was used with a beneficial but not curative effect in three cases. The treatment should include a diet high in calcium, measures to prevent constipation and exposure to sunlight.

JOHN J. MURPHY, M.D.

JOHN J. MARONIA, M.D.

ANTISEPTIC SURGERY TREATMENT OF WOUNDS AND INFECTIONS

We nbe g M Anti Gangrene Serum and Its Therapeutic Use G s Gangrene Appendix t s Gangrene of the Lung (Da t t a g S u m d e A d T i p G g s a e App nd t L g b e) S / b k p f g 9 7 79 45

Ir r to the ar th F a n k e l W e l c h b a c i l l s (bacillu pe r i g n s) and l a s t e u r s s e p t i c v i b r o e a r e a c c e p t e d a t h c a u s e o f g a s g a n g r e n b u t w a r p r i e n c e d e m o n s t r a t e d t h a t o t h e r a n a e r o b c o r g a n i s m s a l o p l a y a p a r t i n t h i s i n f e c t i o n T h e b a c i l l s o e d e m i t s w h i c h i s v e r y t o x i c w a s f o u n d i n o n t h i l f t h e c a s e s I n a d d i t i n t h e h i g h l y t o x i c a n d p r o t e o l y t i c b a c i l l u h i t o l y t i c s a n d t h b a c i l l u s s p o r o g e n s e e f o u n d

I n f e c t i o n w i t h t h e b a c i l l u s p e r f i n g n s a l n e p o d u c e t h e c l a s s i c a l p i c t u r e o f g a s e m p h y s e m a i n t h i s d i f f e r e n t f o r m s (w i t h b o n e d i c o l o r a t i o n o r h i t e g a n g r e n) b u t s i m i l a p i c t u r e s m a y b e p r o d u c e d b y m i e d i n f e c t i o n T h e a s s u m p t i o n t h a t g a s o f p u t r i f a c t i o n m u s t a l w a y s d e v e l o p s e r r o n o s I n s p r e s e n t o f t h e c a s e s t h i s s i g n s o f p u t r i f a c t i o n v i d e o t o t h e p r e s e n c e o f t h b a c i l l u s s p o o n e

A l l i n f i t o u o d c o m p l i c a t i o n s h o u l d b e c a l l e d t r a u m a t i c a n d t h e r m g a s g a n g r e n s v i d e o f c a u s e o f t a u m a t i c e m p h y s e m a t o u s g a n g r e n e

The nature of the causat e organ m cannot b det mined f the clinic l picture alo e Repeated b a t r i l o g i c l a m i n t i o n s o f t h e v o u n l s e r e t o n a e n e s a y

Serum th apv must be d r t e d a g a i n t a f i e o g a n s m s t h e b a c i l l u s p e r f i n g n s t h e b a c i l l u s s p o r o g e n s t h e b a c i l l u s o e d e m i t s t h e b a c i l l u s h i t o l y t i c u s a n d t h e b a c i l l u s s p o r o g e n e s I t h a s b e n p o s s i b l e t o d e v e l o p a m o n o l e n t a n t i t o x i c a n d a n t i b a c t e r i a l s e r u m f o r u s a g a i n t a l l f i v e o f t h a n a e o b e R e c e n t l y a n t i h a e b e n e m p l o y e d i n s t e a d o f t o s A m i x t u r e o f t h e s e r a h s b e e n d e m o n s t r a t e d t o b e m o s t e f f e c t i v e A s a r u l e a q u a d a n t i e r u m s s u f f i c i e n t e x p t i n c s o f p u t r i f a c t i o n i n h i h a n t i s p o r o g e n s s e r u m s h o u l d b e a d d e d A r u l e a g l e n t r a e n o u s i n j e c t i o n o f t h e e u m g v e s t h e l e s r l e u l t I t i s f o r s e u n d e r s t o o d t h a t t h i n j s h o u l d b e t r a t e l a c o r d g o s u r g i c a l p r n i p l s T h e e u l t a e c c l e n t

O f s e v e r a l c a s e s o f g a s g a n g r e o c c u r r i n g d u r i n g t h e v a t h e s e r u m f a i l e d i n o n l y f o u T h e i n t r a m u s c u l a r i n j e c t i o n o f t h e s e r u m i s r e c o m m e n d e d a s p o p h y l a c t r i a t m n t

Antigangrene eum can be used to g e t a d v a n t a g e i n c l i n i c a l p r a c t i c e I n c e t a r c s c o f a p p e n d e x t s p u e p e a l s e p s a n d l u n g g a n g r e n e i t m a y s e v e l i f a s i n t h e s c o n d i t i o n s t h e o g n i m c a u s i n g g a s g r n m a y b e p r e n t I t s h o u l d b e u s e d a l o i n c a s e s o f g a n g r e n e o f u n k n o n e t o l o g y (a n g n a d a b e t e s t)

The good results cannot al w a y s b e a s c r i b e d t o a p u r e l y s p e c i f i c a c t i o n o f t h e s e r u m A p a r a s p e c i f i c c o m p o n e n t m u s t b e a s s u m e d A p p a r e n t l y t h e u s o f t h e s e u m c a u s e s s e p a r a t i o n o f t h e p o l y b a c t e r i a l g r o u p w h i c h W e i n b e r g c a l l e d K a t a i e

KREUTER (2)

ANÆSTHESIA

G w a t h m e y J T a n d H o o p e C W P e l i m i n a r y M e d c a t o n i n G e n e r a l A n æ s t h e s i a w i t h S p e c i a l R e f e r e n c e t o t h e M a r g i n o f S a f e t y a n d P o t e n t i a l L e s i o n s o f t h e L u n g t h S b 9 8 4 6

T h a u t h o r s g v e p e l i m i n a r y m e d c a t i o n b e f o r e a d m i s t r i n g a n a n æ s t h e t i c b e c a u s e i t p r e e t s p s y c h o c h o c k i n r e a s e s t h e m a g n i t u d e o f s a f e t y m o d i f i e r a b o l i s h s u n t o w a r d s y m p t o m s d u r i n g t h e i n d u c t i o n a n d m a i n t e n a n c e o f t h e a n æ s t h e s i a a n d p r e v e n t s p o s s i b l e p o s t o p e r a t i v e l e s i o n s i n t h e l u n g s T h e y b e l i e v e s u c h p e l i m i n a r y m e d c a t o n i s i n d i c a t e d w h e n t h e a n æ s t h e s i a s t o b e l o c a l s p i n a l r e g o n a l o r g e n e r a l M a g n e s i u m s u l p h a t e i s a s s i t a b l e a g e n t t o p r o l o n g s t h e a c t i o n o f m o r p h i n e a n d f o r t h e r s e l e d e n t e n t h e a n æ s t h e s i a

I n 200 c o n e u t i c a c a s e s i n w h i c h m a g n e s i u m s u l p h a t e c o m b i n e d w i t h m o r p h i n e w a s g v e n b e f o r e o p e r a t i o n t h e a v e r a g e l e n g t h o f t i m e b f o r e a s e d a t i o n e a s n e e d e d s i x t e n h o u r s w h e r e a s i n a p r a c t i c a l s e r i e s o f c a s e s i n w h i c h m o r p h i n e w a s g i v e n a d d e d e v a u s u a l l y n e e d e d a f t e r f o u r h o u r s I n t h e f i r s t s e r i e s 400 c c m o f a s t r i l e 4 p e r c e n t c h e m i c a l l y p u r s o l u t i o n o f m a g n e s i u m s u l p h a t e s l u t o n e g v e n b y h y p o d e r m o c l y i o n e a d o n e l i f h u r b f o r e t h e o p e r a t i o n L a t e r e p e c e h a s p r o v e d t h a t i n t r a m u s c u l a r i n j e c t i o n o f 6 c c o f a 5 p e r c e n t s o l u t i o n t h r e e d i d e d d o s e s i e q u i v a l e n t t o t h e 6 g m u s e d p r e v i o u s l y

E x p r i m e n t s o n a m a l h a e s h o n t h a t w h e n p e l i m i n a r y m e d i a t i o n i s g i v e n a n æ s t h e s i a o c c u r s s o n r a n d l e s t h i s n e c e s s a r y a n d t h a t t h e m a g n i t u d e o f s a f e t y b e t w e e n c o m p l e t e a n æ s t h e s i a a n d r e s p i r a t o r y f a i l u r e i s l e n g t h e n e d

I n a l a r g e n u m b e r o f n e c o p s i e s p e r f o r m e d o n a n m a l t d e r m e n w h y p e l i m i n a r y m e d c a t o n c a u s e s i n c e a d d i t o r n e c e s s a r y g e n e r a l a n æ s t h e t i c s t

I t w a s f o u n d t h a t h e n o p r e l i m i n a r y m e d c a t o n w a s u e l l t o g o s o o c c u r r e d r e g a r d l e s s o f t h e a n æ s t h e t i c e m p l o y e d w h e r e a s h e n p r e l i m i n a r y m e d c a t o n w a s g v e n t h e l i n g e r e r e l a t i v e l y n o m a l

T h e p e l i m i n a r y m e d i c a t i o n s u g g e s t e d f o r c h i c a l p u p o e s s t h e i n j e c t i o n o f 6 g r o f m m p h s u l p h a t e s o l u t i o n d i s s o l v e d i n 2 c c m o f m a g n u s u m s u l p h a t e s o l u t i o n r e p e a t e d o n c e o r t w i c e a t i n t e r

I f o f t e n t y o t h i r t y m i n u t e s I f a n i h o s y n c a s y i p e s n t i t i l l d e l o p b f o r e t h e m e f o t h e t h i r d d o s e I f d e p a n æ s t h e s i s d e i r e d t h e a u t h o r p r o p o s e s t e n t s a r e g i v e n a s s m a l l d o s e s f e t h e r p a a l d e h y d e a n d o f e o i l a r e t e n t e n m m I f n o t r o s o r d e a n d o v e r g a r e e m p l o y e d t h e o y g n s h o u l d b e i n r e s d f o m t h e u s u a l 10 p e r c e n t t o f r o m 30 t o 50 p e r c e n t

M R R A S C L M D

Hughes C. The Present Position of Spinal Anesthesia. *Proc Roy Soc Med Lond* 1927 vii 189

The author briefly reviews the history of the induction of anesthesia by the intradural injection of drugs. Following early discouraging accidents with cocaine the method fell into disrepute and it was only after the discovery of novocaine, stovaine, alpin and tropococaine early in this century that interest in the procedure was revived.

When properly induced spinal anesthesia is suitable for the treatment of a wide variety of conditions and its mortality is low. A preliminary narcotic should always be given. The chief contraindication to the method is low blood pressure but the danger of a fall in normal blood pressure is not great if the proper precautions are taken. In a series of 500 cases the average fall was 30 per cent. The fall is apt to be greater in cases of high pressure than in those of normal pressure. A fall in the blood pressure is usually not of grave import unless it is accompanied by a rise in the pulse rate. Collapse can be guarded against by the use of strychnine or caffeine.

The author uses a 5 per cent solution of stovaine and a 10 per cent solution of sodium benzoate and caffeine citrate in distilled water. This is usually given in a dose of from 4 to 6 c cm and may be used with or without light inhalation analgesia. Throughout the period of analgesia and for one or two hours afterward the patient is kept in a moderate Trendelenburg position. Immediate post-operative complications are few and slight.

FRANK B. BERRY M.D.

Hanrahan E. M. Jr. Brachial Plexus Nerve Block. *J. M. Soc.* 1928 ix 39

Although brachial plexus nerve block has not found much favor in America the author has employed it in forty three cases. The results were perfect in thirty six cases, satisfactory in four and unsatisfactory in three. Two of the cases in which the results were unsatisfactory were those of young children. Subcutaneous infiltration was necessary to complete the anesthesia in three cases. The author prefers the supraclavicular approach of Kulenkampf. He employs from 10 to 10 c cm of 1 per cent procaine hydrochloride. It is important to obtain paræsthesia on insertion of the needle beneath the fascia before the solution is injected. In all cases in which this was done the anesthesia was entirely satisfactory. If paræsthesia cannot be obtained a wide injection must be made and half an hour allowed to elapse before the operation.

For cutting operations Hanrahan advises the subcutaneous bracelet injection of 0.5 per cent solution of procaine hydrochloride to render the skin entirely anesthetic. In cases requiring extensive manipulation morphine and atropine may be given prior to the operation.

In the author's cases brachial plexus nerve block was used for the treatment of palmar abscess, amputation of the thumb, open and closed reduction of fractures of bone of the forearm, amputation of the shoulder and the reduction of dislocations. No untoward results attributable to the anesthesia were observed in any instance.

WILLIAM J. PICKETT M.D.

Beckman H. The Alleged Synergism of Magnesium Sulphate and Morphine. *Am J Obst & G* 1925 x 7

Beckman states that in 113 experiments performed on fifty one animals he was unable to find any evidence of synergism of magnesium sulphate and morphine. He believes that the claims of such a synergistic action are based on failure to distinguish clearly between addition and true synergism.

PODRICK V. GRACE M.D.

SURGICAL INSTRUMENTS AND APPARATUS

Lost M. H. Sterilization of Sharp Instruments. *J. Ophth.* 1928 x 3 18

Lost sterilizes his cataract knives and other sharp instruments in a solution of the following composition: alcohol 95 per cent and liquor cresolis composed of 2 per cent 2 oz commercial chloroform and liquid albolene 2 dr.

No rust or tarnish appears even when the blades are immersed for many days. The germicidal properties of the solution were investigated by dipping threads into suspensions of various pyogenic organisms, placing the threads in the solution for varying periods and then culturing the threads. In no instance in which exposure to the solution had lasted for one minute or more did any growth appear.

The blades are wrapped in cotton and immersed in the solution for half an hour or more. The cotton is then removed and the blades are allowed to dry. The slight remaining film of albolene is wiped off. Following an operation the blades are immersed again for one minute and allowed to dry. Oxidation is prevented by the film of albolene. Staining has never been caused by this solution and there is no loss of sharpness if the blade is handled carefully.

LAWRENCE JACQUES M.D.

MISCELLANEOUS

CLINICAL ENTITIES—GENERAL PHYSIOLOGICAL CONDITIONS

Melch H Indelible Ink Pen il Injuries 1
S g 981 v 95

Melch reports a case of injury due to an indelible pen and reviews the literature on such injuries. The solution of the aniline dyes—chiefly methyl violet and methyl blue—in the tissue juices produces an aseptic necrosis of the tissue which develops slowly and is apt to be extensive. As attempts to remove the offending body may break it into small fragments injure the protective wall about it and open the tissue spaces the rational treatment is wide excision of the wound and the containment of the body at the earliest possible moment. RICARD F H DON M D

Weintob M and Messeloff C R Gas Gangrene in Civil Practice 1 J M S 97 1 8

This report is based on 85 cases of gas gangrene treated at Bellevue Hospital, New York.

The condition as first described in 1853 but during the next thirty years little was written on the subject. The World War with its thousands of cases of infection by gas bacilli gave a good opportunity for an intensive study of the disease. During the early years of the war from 1910 to 1918 per cent of all wounds in the British Army became infected with gas bacilli and the mortality ranged from 9 to 50 per cent.

The predominant organism found in this infection is the blue elastic vibrio septique and the bacterial adematosis.

The 85 cases reviewed were seen in the period of fifty years from 1910 to 1960 and represent a case of the condition to every 730 hospital admissions. In the period from 1910 to 1918 the incidence was 1 case of gas gangrene to every 644 cases admitted to the hospital. The early mortality rate in British cases averaged 10 per cent but in 1918 with better care and more knowledge of the nature and proper management of the disease the rate dropped to per cent. In the series reviewed it was 45 per cent. The majority of the patients were males between the ages of fifteen and sixty years. No case was seen in a child under five years of age.

Many theories have been advanced as to the cause of gas gangrene but to date none has been accepted.

The infection occurs most frequently in damaged muscle it being essentially a disease of devitalized tissue. Single muscles may be affected in their entirety with or without any invasion of adjoining tissues. In many of the cases reviewed the condition developed after a compound fracture and in 58 per cent of the cases the fracture involved the tibia.

In addition to the local lesions in the muscle tissue the cardiovascular system is often invaded. Frequently the liver is enlarged and contains gas bubbles. Occasionally the adrenals show medullary congestion and hemorrhages.

In civil practice the condition usually develops in a lacerated wound contaminated with dirt or an apparently clean gunshot wound.

Pain is the most prominent symptom but is usually of short duration. As a rule it is followed by a sense of numbness in the part affected. Even in advanced stages of fatal cases the mentality is little affected there being a general sense of well being.

An unexplained swelling in cases of compound fracture should be considered a suspicious sign. The swelling is tense and different from the usual pre-suppurative swelling. As a result of the edema the skin becomes at first unusually pale then of a dirty cream color and then purple. The margins of the purple are easily distinct and irregular. They first swell and later collapse. Serousanguinous blisters appear and are followed by a greenish yellow tint. The discharge is thin and hemorrhagic and has a characteristic pungent putrefactive odor. It contains little pus. As a rule a rankling sensation is noted on palpation of the skin.

Early in the course of the condition the pulse is rapid and the temperature relatively low. In the latter stages reviewed the average temperature at the time of the patient's admission to the hospital was 100.6 degrees F and the average pulse was 111. Most cases show an early leucocytosis with a proportionate increase in the polymorphonuclear cells. A moderate anemia is also noted. Blood cultures are infrequently show the bacilli well.

Probably the best outline of treatment available at that time was given out by the United States Medical Corps prior to the battle of Chateau Thierry in 1918. According to this outline operation should be done as early as possible and anesthesia should be induced profusely with nitrous oxide oxygen. Longitudinal incision should be made half an inch as long as is apparently necessary in the skin and fascia. The use of tourniquets and the cutting of normal muscle to be avoided. As much skin should be left as possible. The wound should be opened thoroughly and freely. All torn crushed and discolored muscle should be excised only that which is firm and normal in color and bleed freely being left. All loose bone and foreign bodies should be removed. After the arrest of hemorrhage the wound should be left open and filled with moist gauze. Tight packing is to be avoided. Carrel tubes may be employed if they can be properly cared for. Plenty of dressings should be used and the patient immobilized with splint.

In the cases reviewed the mortality was 83 per cent in those not operated upon 64 per cent in those treated by debridement 40 per cent in those treated by amputation and 17 per cent in those treated by debridement followed by amputation.

Serotherapy has been found of great value in gas gangrene. It seems to give the best results when it is used as a prophylactic agent. A mixed or polyvalent serum is most effective. The method of choice for its use is intravenous injection combined with intramuscular injections proximal to the wound. Serotherapy cannot supplant surgery. In civil practice it seems to be entirely secondary to surgery but its use is probably advisable after debridement.

HAROLD M CAMP M D

Wilmoth C L Subacute Inguinal Lymphogranulomatosis. A Report of Twenty Seven Cases. *South M J* 1928 vii 108

Inguinal lymphogranulomatosis is a disease of unknown etiology affecting young adults. In the United States it is seen most frequently in persons who have recently returned from the West Indies or Central or South America. There is some evidence to support the view that it is contracted by sexual intercourse. The superficial subinguinal glands are involved. No evidence of a primary lesion in the tissues drained by these glands has been observed. The pathology of the condition is essentially that of a low grade pyogenic infection. Necrosis is rather than suppuration occurs as the disease progresses and there is a peridontitis which results in fusion of the individual gland.

The incubation period is probably four or five weeks. The disease develops so slowly that medical aid is usually not sought until about three weeks after the enlarged glands are first noticed. With the development of a peridontitis the overlying skin becomes reddened and adherent. As a rule the condition is unilateral. Occasionally spontaneous recovery occurs. The treatment of choice is excision of the involved glands. LAWRENCE JACQUES M D

GENERAL BACTERIAL PROTOZOAN AND PARASITIC INFECTIONS

Castellani A Notes on Blastomycosis Its Etiology and Clinical Varieties. *Proc Roy Soc Med Lond* 1928 vii 447

Castellani gives a classification of the clinical varieties of blastomycosis and describes the cultural characteristics of the yeast like or budding fungi included in this classification. Most of the varieties are found in the tropics but blastomycosis verrucosa affecting the skin is found in all parts of the world.

MANUEL F LICHTENSTEIN M D

Christopherson J B On the Treatment of the Actinomycosis Type of Mycetoma. *Proc Roy Soc Med Lond* 1928 vii 471

This article reports a case of actinomycosis of the parotid gland which was under treatment for more

than two years. Radium and roentgen irradiation was tried but failed to cause improvement. The author believes that large doses of potassium iodide over long periods of time are necessary to obtain a cure. He has given 240 gr daily for over five months without causing any ill effect.

MANUEL F LICHTENSTEIN M D

Barnett L E Colossal Hydatid Cysts. *Med J Australia* 1927 ii 878

Barnett reports an enormous hydatid cyst of the abdomen in a man thirty nine years of age who had spent most of his life among sheep and dogs. An interesting point in the history was that when the patient was six years of age he fell heavily striking his abdomen against a projecting stone. During the thirty three years that had elapsed since the accident there had been a gradual swelling of the abdomen. Barnett believes that at the time of the injury an echinococcus cyst of the liver was ruptured intraperitoneally.

Exploratory puncture of the abdomen was negative because of the thickness of the peritoneal exudate. At operation the entire abdomen was found filled with hydatid cysts of various sizes. Eleven gallons of fluid were removed. The patient made a complete recovery.

In Barnett's opinion this cyst formation was preceded by a choleperitoneum at the time of rupture of the cyst of the liver and as a result of the liberation of bile a false membrane was formed in the peritoneal cavity.

JOHN H GARLOCK M D

DUCTLESS GLANDS

Frank R T Endocrine Therapy. *Am J Obst G* 1928 v 40

The author traces the history of endocrinology from its origin in Parry's clinical description of exophthalmic goiter made in 1825 down to the present day. Our knowledge of endocrine diseases has progressed steadily. The function of the glands of internal secretion with the exception of the thymus and pineal and a large number of syndromes due to disturbance of their function can now be outlined with considerable degree of assurance.

The noticeable advance made in the last decade was due to the fact that the pharmacologist the physiologist and the chemist supplanted the empirical investigator. Each advance was based upon the discovery or elaboration of some specific test for a given endocrine product. Laboratory workers have shown that potent endocrine substances in minute concentration produce easily recognizable effects and in overdose may cause severe symptoms of poisoning. Adrenalin pituitrin thyroxin insulin the parathyroid hormone and the female sex hormone possess this quality.

In women the three most striking and frequent syndromes encountered have to do with the pituitary gland the thyroid and the ovaries. The disturbances are of the hyperfunctional and hypofunctional

types. In obese patients blood studies may show a depression of the ovarian function. In rare instances there is hypofunction of the adrenal pancreas and parathyroid but hyperfunction of these glands with the exception of the adrenal in childhood is not recognized.

Hyperfunctional conditions call for toning down of the hyperactivity of the affected gland. This may be done by complete ablation, partial resection and X-ray therapy. At times indirect methods such as the use of iodine in adolescent goiter are indicated.

Hypofunctional conditions require stimulation of the glands. In the case of the ovary, small doses of the X-ray increase function by killing off atretic follicles. In cases of pituitary and thyroid underactivity, substitution of the appropriate hormone is made. The first successful use of thyroid substance was made in 1896 by Murray who gave fresh and glycerinated thyroid gland to a woman suffering from myxedema and thereby kept the patient in excellent health for thirty-four years.

The author's few attempts to stimulate ovarian function by means of the female sex hormone are not as yet sufficiently conclusive to warrant a definite opinion.

It is unusual to give so-called stimulating doses of X-ray irradiation to the ovaries as the margin of safety is too small. Except in the presence of thyroid carcinoma, the trial of small amounts of thyroid extract is justified to determine the patients' response to the stimulation of body metabolism.

The well-known specific effects of X-ray in ulcers and of parathyroid hormone in tetany are not included in this discussion. Pituitary does not replace the loss of the anterior lobe of the pituitary. Its uses in obstetrics, intestinal paresis and diabetes in adipose cells are known. Attempts to produce an anterior lobe extract have been only partially successful.

Such effects are known to exaggerate the growth impulse of young animals and to produce marked retardation in growth in the ovaries. Zondek reports that puberty can be induced by the implantation of adult (male or female) anterior lobe substance in the young mouse. The observation is confirmed and proves the interrelation of the gland. However, there is no tractable material for therapeutic use.

The effect of active female sex hormone extrauterine in the human female is a new chapter in endocrine therapy. The valuation of the results obtained by its use is aided by the specific tests for identifying the female sex hormone and by the method for determining its concentration in the circulating blood. Its source is known to be in the follicular corpus luteum and placenta (the three forming the gestational gland). Only lightly potent preparations

have been obtained. The author has tried them in several classes of cases without signal success but the work is still in the experimental stage. The outlook would be more promising if more concentrated product could be prepared.

Endocrine therapy has thus been placed on a rational basis. Thyroid substance, thyroxine, insulin and parathyroid hormone are well established products. Adrenalin and pituitary subserve limited but well defined purposes. The female sex hormone is available in small amounts for experimental and clinical investigation. Anterior lobe pituitary, adrenal cortex and testicular hormone are being studied.

M. PRICE MEYERS, M.D.

SURGICAL PATHOLOGY AND DIAGNOSIS

M. C. C. W. C. A. Cytological Key to the Diagnosis and Prognosis of Neoplasms. J. L. B. & Co. 1938. 34.

The usual clinical groupings of pathological specimens is as follows: inflammatory (acute and chronic); neoplasms (benign and malignant) and questionable (inflammatory or neoplastic).

The inflammatory group is characterized by one or more of the following phenomena: congestion, edema, necrosis, leucocytic, lymphocytic and endotheliocytic infiltration, fibroblastic and fibrocytic proliferation, hyalinization and such cytologic changes as granular degeneration, fatty degeneration, vacuolization, pyknosis and the presence of cancerous giant cells.

The neoplastic group is characterized by the presence of a mass of masses of cells which do not have the exact histological arrangement of normal tissues but seem to be displacing normal tissues by expansion or invasion. If the cells are regular in size and shape and encapsulated and if they have the morphology of normal adult types of cells the condition is benign. If on the contrary they do not have the low power arrangement of normal adult cells if they are irregular in shape and size if they contain asymmetrical mitotic figures if they are hyperchromatic and if they replace normal tissues by invasion and infiltration and especially if the mass is non-encapsulated the condition is malignant.

The third, doubtful group is characterized by a combination of the characteristics of Groups 1 and 2 and thus presents the greatest differential diagnosis difficulty.

The key to the diagnosis of malignant and benign neoplastic conditions and inflammatory conditions and for prognosis is a careful perceptive of the differential detailed morphological characteristics of adult tissue cells: reparative regenerative cell and neoplastic cell. M. R. H. K. & Co. 1938.

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O R B t J O p h t h 9 8 85
D t h f d g h a d n g c c o m m o d a
t n ? E P F o T I N R d s p l d a d 9 7 76 [448]
I m f p p p l l r y m m b J L J o P a f R
t f t l m l y d c r u l 9 354
Ch d t j u p p l l I C M N N P c R y
S M d L o d 9 8 69
D r u g l g d i f t y D C A R D E L L P c
K y S o M d L o d 9 8 69
A d t k f t h f d c u l J P C A L H O U N
A m J O p h t h 9 8 3 9 [448]
A d t k f t h t J M G S C O M A m J
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C G C e L a r y p 9 8 7
A f t t p t a m C G P W O O D P c K y
S M e d L o d 9 8 6
O t h a e d t h e f m l y d o c t G B M C A z e
M d J & R 9 8 9
O t h l g l h a m h g a d m m e t h d f
c t l P S S o t L r y n p 9 8 x
Th a d l g y f t h m l d b m l l b y t h
H G I t o c s J L a r y n l & O t l 9 8 i 9
A t n b t t t h p h y l y o f t h t l l y
i t h f t h e I R U E T E d R D M d I b e 9 7
58
Th s l m t d t () f t () l i t e
a f b r i m t d t V K H R S t h M S 9 8
c 84
P l m t d t H B S I T H N Y k S t t
J M 9 8 3
M t d n f t J H M C C E A D Y A t l t c
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Th n f m t d f f f t H W
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C m p l i t f t m t d t d o d
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J L y g l & O t l 9 8 l 99
O f t h p t t t m t f f x P i m r y
c m m t K B S T E M A N L r y p 9 8
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M p l e c t f p t h l m f t h e t b l
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F b m t f t h e t t e d b y d m F A
P E T E S d N A H E S v P P y S M d L o d
9 8 x 666
A d b l e d w l t f l p l t p t
d b m e c c t J N F i v I r y p
9 8 x x 97
A d h p l t b d g f p l t l p t
J N F H E I N L r y n g p 9 8 x
A n f t e d s h l d f t g p h y f t h l
e r y J D B L O C K E R d l g y 9 8
63

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Two unusual tumors of the thigh M DEWIKER *Bull et m m Soc nat de chir* 19 7 lvi 1434

SUBJECT INDEX

- ABDOMEN** Acute abdominal distensions 208 simulation of gall bladder disease by intercostal neuralgia of wall of 192 284 acute conditions of complicated by ileus or septic invasion of peritoneum 195 prevention of postoperative peritonitis and adhesions in 26 abdominal aneurism 31 pain in associated with throat infection in children and appendicitis 387 relation of surgical pathology of right lower quadrant of to arthritis 411 hæmorrhage of in males 47
- Abortion** Therapeutic with special reference to method of induction 204 indications for interruption of pregnancy 206 482 induction of in syphilis 97
- Abscesses** Etiology and clinical aspects of perinephritic 209 See also names of organs
- Accommodation** Changes in fovea during 448
- Achylia** Relation of chronic gastritis to 101
- Acid** Burns of eye due to 357
- Actinomycosis** Deep of neck and mediastinum 362 of duodenum and jejunum 385 treatment of mycetoma resembling 511
- Actinotherapy** Fundamentals and clinical aspects of light treatment with especial relation to tuberculosis 8 light treatment at London Hospital 315
- Adolescence** Developmental changes during 32
- Adrenalectomy** See Suprarenalectomy
- Adrenalin** in treatment of contraction ring dystocia 66
- Alcohol** Influence of on ovarian activity prenatal mortality and sex ratio in mice 403
- Alkali** Burns of eye due to 357 cure of gastric and duodenal ulcer with 46
- Amenorrhœa** Repeated pregnancy after induction of by roentgen irradiation of ovaries 116
- Amniotic fluid** Quantitative variability of 116
- Amyl nitrite** as antispasmodic in roentgen examination of gastro intestinal tract 380
- Anæmia** Splenectomy in pernicious 474
- Anæsthesia** Spinal in intestinal occlusion 19 21 in urological surgery 46 nitrous oxide in Germany 57 permanent nerve disturbances resulting from spinal 229 evaluation of method in obstetrics 207 nitrous oxide in obstetrics 297 rectal administration of ether and oil and morphine magnesium sulphate and ether in surgery and obstetrics 3 3 in thyroid surgery 41 morphine and magnesium sulphate infiltrations and colonic ether instillations in labor 484 preliminary medication on in general with special reference to margin of safety and postoperative lesions of lung 508 position of pinal 509
- Analgesia** Evaluation of method in obstetrics 97
- Aneurism** Of external iliac artery with rapid evolution treated by extirpation of sac after high ligation of artery 52 abdominal 312 arteriovenous 500 501 treatment of 501 502
- Angina pectoris** Microscopic study of superior cervical sympathetic ganglion in 271
- Angioid streaks** In fundus oculi 448 of retina 448
- Ankle** Treatment of fractures of by Delbet ambulatory plaster splint 499
- Antiseptics** Value of in modern ophthalmic surgery 61
- Antrum of Highmore** Malignant neoplasms of 71 nasal surgical treatment of chronic maxillary sinusitis 361 varying symptomatology of chronic maxillary sinusitis depending on pathology present 263
- Aorta** Aneurism of abdominal 312 rupture of during labor 485
- Appendectomy** Empyema in auto amputated appendices after 106
- Appendicitis** Gynecological considerations in chronic 283 etiology and sequelæ of chronic 283 diagnostic difficulties in chronic 283 symptomatology and diagnosis of chronic 283 chronic pseudo due to intercostal neuralgia 84 postoperative complications of suppurative 8 abdominal pain of throat infections in children and 387 strictly mechanical obstruction of intestine without abscess or peritonitis in course of intestinal attack of 38 acute in aged 472
- Appendix** Empyema in auto amputated after appendectomy 66 pseudomyoma peritonitis associated with ruptured ovarian cyst and disease of 379 relative frequency of various positions of 472
- Arachnoiditis** Unilateral pachymeningitis and 454
- Arteries** Arterial hypertension and retinal changes 88 discordance between local hyperthermia following sympathetic neurotomies and circulation in 137 diagnosis and treatment of disease of extremities 311 immediate effect of ligation of 505 saline wheal test as measure of blood supply in disturbances of of extremities 505
- Artery** Bilateral papillary vascular loop of retinal 4 arterial spasm and occlusion of branches of central of retina 5 aneurism of external iliac with rapid evolution treated by extirpation of sac after high ligation of 5 ligation of femoral below origin of profunda femoris in obliterative endarteritis of leg 55 injections of substances opaque to roentgen rays into carotid 136 physiological and histological study of circulatory conditions in left lower extremity in case in which femoral was ligated in 180 37 embolism of retinal 175 effect of sympathetomy of hepatic on wound healing and on biligenic and glycogenic function of liver 287 successful Trendelenburg operation for embolism of pulmonary 504
- Arthritis** Rheumatoid a deficiency disease 47 relation of surgical pathology of right lower quadrant to 411 gonorrhœal 411 second type in shoulder 41
- Arthrodesis** 305 498 indications technique and results of sacro iliac 47
- Aspergillus** Granuloma due to in adenoid orbit 174
- Astragalus** Treatment of fractures of 310
- Atelactasis** Primary carcinoma of lung showing and pleural effusion 12 postoperative pulmonary 457
- Atlas** Simple rotary dislocation of 221
- Auditory nerve** Herpes zoster oculus 15 deaf mutism due to bilateral lesions of auditory sensory areas 175
- Axilla** Connections between pleura and lymphatic glands of 36
- Xæstæmia** in surgery 506
- BACK** Low sprain of 30
- Backache** due to seminal vesiculitis and prostatitis 45
- Basedow's disease** See Cœter
- Bile duct** Importance to surgery of cystic duct is of common resected by tetraiodophenolphthalein test in patient who had been subjected to cholecystectomy 194 effects of obstructive lesions of common of liver 390 congenital cystic dilatation of common 474

- Cancer Colloidal lead in treatment of 60 14 3 6 nature of 141 studies in incidence and inheritability of spontaneous tumors in mice 141 changes in histological structure of following section of its sensory nerve supply and influence of this neurotomy on course of various pathological processes 14 value of intravenous injections of dextrose during radiation treatment of malignant disease 230 importance of vascular permeability in therapeutic use of roentgen rays and radium in malignant disease 230 *See also* names of organs
- Carbon dioxide Control of hiccup by inhalations of 196
- Carbuncles Treatment of 345
- Carcinoma *See* Cancer and names of organs
- Cardiospasm 186 findings with barium bougie in 3
- Carotid artery Injection of substances opaque to roentgen rays into 136
- Cataract Extraction of 4 pleas for variety in usual treatment of congenital 260 loss of vitreous in extraction of 260 comparative results obtained by combined simple and Knapp-Torok methods of traction of 60 nonoperative treatment of 38 lens antigen treatment of 358 and postoperative treatment 44
- Catgut As source of fatal operative wound infection of vitreous body pathogenic anaerobic of gas anaerobic group not hitherto described 313
- Catheter Cystitis not due to 403
- Cerebellum Roentgenological visualization of 363
- Cerebrospinal fluid Comparative chemical studies of cerebrospinal fluids blood and 137
- Chest Intrathoracic tumors 15 X-rays in diagnosis of intrathoracic growths 18 parasternal incision of in breast cancer and its suppression by use of radium tubes as operative precaution 272 value of lateral exposure in roentgen examination of 49
- Child Separation of mother and child means of prevention 488
- Choked disk *See* Papilloedema
- Cholangitis following cholecystenterostomy 302
- Cholecystectomy Common duct stasis relieved by tetraiodophenolphthalein test in patient who had been subjected to 194 without drainage 88
- Cholecystenterostomy Cholangitis following 39
- Cholestylin Importance of in production of symptoms of diverticula and duplication of duodenum masked recurring without stones 193 external function of pancreas in and astroduodenal ulcer by simple and fractional examination of duodenal juice 194 bacteriology of 391
- Cholecystoduodenostomy Experimental study of cholecystoastrostomy and 28 side tracking operations for bile duct obstruction 107
- Cholecystogastrostomy Experimental study of cholecystoduodenostomy and 28 side tracking operations for bile duct obstruction 107 in acute hepatic degeneration 389
- Cholecystography New iodine compound for 7 toxic effects of dyes used for 391 concentration of media for biliary bladder 391
- Choledochenterostomy Side tracking operations for bile duct obstruction 107
- Choledochus *See* Bile duct
- Cholelithiasis *See* Gall stones
- Chordotomy Technique of 366
- Chromoma of forearm 316
- Circulation Discordance between local hyperthermia and arterial flow in sympathetic neurotomy 137 colic lateral in blood vessel diseases of lower extremities 225 fate of foreign bodies in venous system direct observation of in living liver 87 study of placental in multiple pregnancies by stereoradiographic method 390
- Cleft lip *See* Harelip
- Cleft palate Treatment of by operation 90 cause of failure of repair of in infants and its prevention 91 importance of pediatric care in operative treatment of 16 surgical correction of 176
- Club foot Elastic treatment of 46
- Club hand Congenital ulnopalmar with subluxation of fingers 130
- Cold Tetanus of shock form in hemolytic icterus 195
- Colic Colic of in treatment of constipation 282
- Colitis Treatment of chronic ulcerative 386 bacterial etiology of chronic ulcerative 47
- Colon Symptomatology and diagnosis of cancer of large colon 133 interpretation of radiological elements between histological and 24 result after fourteen years of resection of hemocolic form of cancer 103 clinical and pathological value of polyps of and their clinical and pathological anatomical relationship to carcinoma of sigmoid in relation to carcinoma of cancer of pelvis and rectum 366 pleural cancer 356 relation of surgical pathology of right lower quadrant to 373 414 gastric trochanteric anastomosis of stomach 414 junction and 464 vasculature of tumor of left part 474
- Colotomy Division of 22
- Constipation Treatment of 44
- Constipation Result of right hemicolectomy for fecal stasis 105 value of resection and colostomy 105 place of colotomy in treatment of 282
- Crohn's disease Latent in case of gastric fistula and pathological changes in hemorrhaecia 47
- Croup Action of omentum in tracheobronchial tract 31
- Cranial Palpation of motor muscles 175 palpation of unilateral paralytic of all 9
- Cystectomy Bile duct 8
- Cystitis Catheterism nomogram 493
- Cystography 406 as a diagnostic of polycystic lesions in female 39
- Cystitis Pathology and treatment of dangerous lymphatic origin in certain cystic formations in pelvis follow total castration of female 115 colossal hydatid 511 *See also* names of organs
- DIALUTIS due to bilateral lesions of auditory sensory areas 75
- Deafness Relation of tamponade of eustachian tube progressive middle ear 8 of laryngologic phase of focal infection 6 nutritional investigation of otosclerosis 361
- Deauroenterostomization 467
- Dentorocystitis Pathology and new treatment of 2
- Dextrose Value of intravenous injections of during radiation treatment of malignant disease 230 prevention of peritoneal adhesions and encapsulation by hypertonic solution of 275
- Diabetes And pancreas 399 pancreatic cyst associated with 44
- Diaphragm Thoracoperitoneal operation for hernia of 31 inflammatory disease of 196 hernia of 475
- Diarrhoea Intestinal mechanism of 411
- Ditherym Value of in treatment of roentgenolysis 58 use of surgical for malignant tumors in anterior air passages 63 application of heat 131 in iridocyclitis 38 surgical in breast cancer 371 in treatment of benign and malignant lesions of uterine cervix 393

- servations on intramural and isthmus portion of with special reference to so called isthmus pasm 306
 clinical x-ray lipiodol study and insufflation of in fifty cases of occlusion of 306 study of fertility by peruterine insufflation on and lymography 4 b
- Fascia** Grafts of dead preserved 8
- Femoral artery** Ligation of below origin of profunda femoris in treatment of obliterative endarteritis of leg 55
 physiological and histological study of circulatory conditions in left lower extremity in case in which was ligated in 18 137
- Femur** Fractures of upper end of 134 treatment of central location of 134 roentgenograms of fractures of 22 fibrocystic disease of 413 fracture of shaft of 418 isolated fracture of lesser trochanter 40 late end results in ununited fracture of neck of treated by bone peg or recon traction operation 41 treatment of fractures of neck of femur 41
- Fetus** Clinical signs of distress of during labor 106
- Fingers** Importance of junctura tendinum in lesion of extensor tendons of 48 congenital ulnar palm lull hand with subluxation of 130 isolated plantar callus 19
- Fistula** Of small and large intestine 18 u a h s and umbilical 31 transplantation of ureter into bladder 11 obtain phincteric urinary control in escovaca 113 duodenal following nephrectomy 123 uterovaginal and esocervical combined 9 totam of duodenal 386 gastrojejunocolic and gastrojejunocolic ulcer 464
- Flat foot** Relation of rickets of lower extremities and static 415
- Forearm** Open reduction of fractures of 133 chromomorph 316
- Fovea** Chancre in during accommodation 445
- Fractures** New device for reduction of 18 str n th of certain material used for extension 44 a e of as indicated by roentgen examination 308 experimental study of internal callus 309 operative treatment of 418 influence of war surgery on treatment of in Great Britain 418 traction and suspension 418 frequency and duration of osteitic processes after osteosynthesis in 49 mechanical action of peno teum in fresh 419 technique of use of grafts in non union of 420 damages to bones and reputations 499 See also names of bones
- Freezing** Periantral sympathectomy in 453
- Frontal sinus** Fracture of anterior wall of 1 meningitis of nasal origin 6 empyema of 1 children 7
- Furunculi** Relation of to hydrocele in Egypt 44
- Furuncles** Relation of 345
- GALL** bladder Experimental study of emptying of 6 pathology of 27 cholesterol of 8 spontaneous rupture of into duodenum 28 mutation of disease of by into costal neuralgia of abdominal wall 29 types of infection of 192 clinical behavior of normal and diseased 88 diseases of liver and bile passages 388 prevalent denial of functions long attributed to 300 concentration of cholecystographic media and bilirubin by 30 and its infections 43 gastro-intestinal symptoms masking disease of 473
- Gall stones** Final examination in surgically treated cases of biliary lithiasis 194
- Gangrene** Of extremities 40 26 317 316 use of anti gangrene serum in treatment of appendicitis and pulmonary and gas 58 gas in clinical practice 510
- Ganglion** Ganglion experimental anatomical pathological basis of surgical treatment of neuralgia of trifacial nerve and change in retroauricular neurectomy 180
- Gastrectomy** Choice of operations for peptic ulcer 10 complete for chronic ulcer with observations on effect of loss of stomach on physiology of digestion in man 103 partial versus gastroenterotomy in surgical treatment of gastroduodenal ulcers 187 partial 187 chancre in chemistry of content of stomach following gastric operations 188 principles of gastric surgery 35 successful resection of upper half of stomach 38 peptic ulcer after extensive resection of 463 fatal dysenteric enteritis secondary to gastroenterostomy or extensive gastric resection on for ulcer of stomach 46 acidity of stomach following gastric resections 468 ileus of afferent loop after resection of stomach for duodenal ulcer and mesoduodenum 40
- Gastritis** Chronic in relation to achylia and ulcer 101
- Gastroenterostomy** Status of in gastric surgery 17 partial strictomy versus for gastroduodenal ulcer 18 secondary resections of stomach in disease conditions after 185 changes in chemistry of contents of stomach following gastric operation 58 principles of gastric surgery 38 reurrent peptic ulceration following duodenal ulcer 38 fatal dysenteric enteritis directly secondary to for ulcer of stomach 467 late results of in ulcer of lesser curvature of stomach 46 deastro-enterostomization 46
- Gastrointestinal tract** Infantile mastoiditis with symptoms referable to 26 amylnitrite as antiprismatic in roentgen examination of 350 symptoms of masking disease of gall bladder 473
- Gastropylorotomy** End results of treatment of gastric ulcers by 380
- Genitals** De loplmental changes in during adolescence 3 treatment of tuberculosis of male 45 topography and clinical aspects of tumors of female 114 cytophagy as a diagnosis of pelvic lesion in female 17
- Genualbum** Relation of rickets of lower extremities to 413
- Gland** Structure and origin of mixed tumors of salivary 8 surgical treatment of tuberculous of neck 138 results of roentgen ray treatment of tuberculous cervical lymph 138 cervical lymph nodes in intracranial carcinoma 177 surgical treatment of cancer of cervical 22 tuberculosis of retrocaecal 83 connections between pleura and cervical and axillary lymph 36 pathology of lachrymal in chronic epiphora 447 value of roentgen ray in diagnosis of tuberculosis of cervical infundibulum 0
- Gland of internal secretion** See Endocrine gland
- Glaucoma** Relation of cupping of optic disk to visual field in 174 non-operative treatment of inflammatory 9 conjunctival drain of anterior chamber in absolute 29 following obstruction of central vein of retina 59 features of complicating iridocyclitis 447
- Goiter** E ophthalmic and in voluntary nervous system 7 course of subjects and objective manifestations of e ophthalmic in fifty elected patients 7 Basedow syndrome six months after treatment with iodine 7 indications for surgical treatment of toxic 92 regeneration of thyroid gland and prevention of recurrent 64 heart block after operation for 263 pathological changes as result of administration of Lugol's solution in exophthalmic 363 pathogenesis considered as one continuous disease process 313 nodular with hyperthyroidism 449 azocarmezin Mallory stain of 449 difficult cases in diagnosis of e ophthalmic 450 treatment of e ophthalmic 40
- Gonococcus** Employment of polar body de loping strains of in treatment of infection due to 45 latent and permoculture 45

- Nephrectomy. Iliac ureterostomy of remaining kidney in tuberculosis of bladder after 40 duodenal fistula following 123 review of eighty five cases of for renal tuberculosis 301 roentgenographic measurement of compensatory hypertrophy of kidney remaining after 40; secondary 40
- Nephritis. Accidental hæmorrhage eclampsia and chronic 483
- Nephroptosis. Small painful hydronephrosis treated by enervation of kidney and 33
- Nerve. Delayed paralysis of ulnar following fractures of external condyle of humerus 93 anatomical anomalies of phrenic and their influence on effects of resection in pulmonary tuberculosis 95 changes in histological structure of cancer following section of its sensory and influence of the neurotomy on course of various pathological processes 142 pallor of optic without functional disturbances in leucitis 175 deaf mutism due to bilateral lesion of auditory sensory axis 175 herpes zoster oculus 15 experimental anatomical pathological basis of surgical treatment of neuralgia of trifacial and changes in gasserian ganglion in retrogasserian neurotomy 180 fractional section of sensory root as major operation in trigeminal neuralgia 180 nomenclature of optic neuritis 350 etiology, diagnosis and prognosis of optic neuritis 359 optic neuritis as aid to diagnosis 359 complete obstetrical paralysis of right brachial plexus and right phrenic in infant two and one half months old 402 prevention of injury to musculospiral 45
- Nerves. Palsies of cranial in otitis media 175 syndrome of unilateral paralysis of all cranial 19 permanent disturbances of resulting from spinal anesthesia 9 physiology of muscle innervation 368 relation of distribution of sympathetic rami to brachial plexus to sympathetomy affecting upper extremity 360
- Nervous system. Exophthalmic goiter and in voluntary encapsulated tumors of 10 physiology of muscle innervation with special reference to influence of sympathetic system 368 structure and formation of interstitial tissues of central 456
- Neuralgia. Experimental anatomical pathological basis of surgical treatment of of trifacial nerve and changes in gasserian ganglion in retrogasserian neurotomy 180 fractional section of sensory root as major operation in trigeminal 180 simulation of gall bladder disease by intercostal of abdominal wall 192 chronic pseudoappendicitis due to intercostal 84
- Neuritis. Retrobulbar and infection of accessory nasal sinuses 61 etiology, diagnosis and prognosis of optic 359 nomenclature of optic 359 optic as aid to diagnosis 350
- Neurofibromatosis. Perineural 10
- Neurogenic sarcoma 369
- Neuroglia. Reaction of and microglia to brain wounds 179
- Newborn. Hemorrhage of 401
- Nipple. Bleeding from 11 Paget's disease of not a simple precancerous dyskeratosis but a true epidermotrophic carcinoma requiring early and complete removal of breast 182
- Nitrous oxide anesthesia. In Germany 57 in obstetrics 9
- Nose. Relation of polypi of to inflammation of accessory sinuses of 6 meningitis of nasal origin 6 occurrence of brain tissue within 89 treatment of malignant tumors of nasopharynx 90 tissue changes in mucosa of 16 diathermy for malignant tumors in anterior air passages 63
- Nurses. Fundamental training for obstetrical 07
- OBSTETRICAL nurses. Fundamental training for 20
- Obstetrics. Responsibility of teacher of in relation to maternal mortality and morbidity 36 evaluation of method of anesthesia and analgesia in 97 results of supervised midwife practice in certain European countries 99 rectal administration of ether and oil and morphine magnesium sulphate and ether in 313 points in for reconsideration and revision 488
- Oesophagus. Pathology of 13
- Oesophagus. Cancer of 184 experimental surgery of 185 diaphragm of thoracic 377
- Omentum. Cystic lymphoma of great 379 torsion of great 379 torsion of without hernia 460
- Operation. Factors determining resistance of patient and decreasing risks of 506
- Optic disk. Relation of cupping of to visual fields in glaucoma 74 mechanical factor in causation of choked in intraocular lesions 267 ocular phenomena caused by basal lesions of frontal lobe 365
- Optic nerve. Pallor of without functional disturbances in leucitis 175
- Optic neuritis. As aid to diagnosis 359 nomenclature of 359 etiology, diagnosis and prognosis of 359
- Orbit. Granuloma due to a perigillous invading 174 peritheloma of 358
- Orthopedic surgery. Physical therapy and its relation to 49
- Osteitis. See Calcanium
- Osteitis. Pathogenesis of fibrosis 30 frequency and duration of osteitic processes after osteosynthesis 40 differentiation of deformans and osteoplastic metastatic carcinoma 498
- Osteoblast. Origin and nature of 470
- Osteomalacia. Ovary in 29
- Osteomyelitis. Recurrent multiple due to staphylococcus aureus 130
- Osteoarthritis. Treatment of by physical agents 30
- Osteosynthesis. Frequency and duration of osteitic processes after 419
- Otitis media. In infant 5 influence of acute in infants on certain systemic conditions and influence of these conditions on method of treating complicating acute 6 cranial nerve palsies in 175
- Otolaryngology. Pediatric aspects of 5
- Otosclerosis. National investigation of 361
- Ovarian extracts. Action and uses of 396
- Ovary. Mechanism and anomalies of ovulation in human 32 action of X-rays on endocrine glands 60 ovarian therapy 11 calcareous concretions probably of ovarian origin simulating uterine or vesical calculi 112 carcinoma of 113 ovarian metastasis with cancer of uterine body 113 topography and clinical aspects of tumors of female genitalia 114 lymphatic origin of certain cystic formations in pelvis following total castration of female 115 repeated pregnancy after amenorrhoea induced by roentgen irradiation of 116 gynecological considerations in chronic appendicitis 283 histological changes in vagina in different phases of functional cycle of 92 in osteomalacia 29 cyst of diagnosed as fibroma of uterus 292 pseudomyxoma peritonei associated with ruptured cyst of and appendicular disease 379 carcinoma of in infancy 397 influence of alcohol on activity of in mice 403 dysfunction of dependent on abnormalities of ductless glands 49
- Ovulation. Mechanism and anomalies of in human ovary 32
- Oxygen. Value of following bronchoscopy in children 173 therapy 459
- Oxya. Experimental 89

- Splenectomy 392 indications for 195 in pernicious anemias and leukemias 474 results of for purpura hemorrhagica 4 5 505
Spondylitis See Spine
Squint Mechanics of operation for 4
Staphylococcus aureus Recurrent multiple otomyelitis due to 130
Sterility Treatment of of uterine origin 33 diagnosis and treatment of of tubal origin 33 working classification of causes of 397 study of by peruterine insufflation and hysteroscopy 4 8
Sterilization Dry of instruments 3 of sharp instruments 509
Stomach Perforation of ulcer of in boy of twelve 6 acute perforation of ulcers of 17 pylorotomy for ulcer of 17 primary resection of in perforating ulcer of 1 final results of gastric resections for cancer of 1 status of gastroenterotomy in surgery of 17 effect of Billroth II resection of on function and structure of pancreas and on intestinal absorption 18 physiology of pain as aid in gastroenterotomy roentgen ray diagnosis 100 effect of experimental pyloric stenosis on secretion of 101 relation of chronic gastritis to achylia and ulcer of 101 peptic ulcer 101 treatment of hemorrhage of 101 part played by infection in development of certain ulcers of 102 conservative surgery for ulcer of 10 choice of operations for ulcer of 102 complete gastrectomy for chronic ulcer of with observations on effect of loss of on physiology of digestion in man 103 results of twenty five year operation treatment of ulcer of 106 partial gastrectomy versus gastroenterostomy for ulcer of 107 secondary resections of in disease conditions after pylorotomy 108 changes in chemistry of contents of following operations on 108 study of external function of pancreas in cholecystitis and gastroduodenal ulcer by simple and fractional examination of duodenal juice 194 medical cure under radiological control of crateous ulcers of 206 corrective surgery following unsuccessful operation for ulcer of 7 omitting after operations on 278 use of amyl nitrite as antispasmodic in roentgen examination of gastrointestinal tract 380 influence of roentgen rays upon secretion of 380 investigation into defects in pyloric part of 380 end results of treatment of ulcer of by gastroenterotomy 380 concomitant gastric and duodenal ulcers two and one half years after operation on 38 lymphogranulomatosis of 381 principles of surgery of 381 management of lesions of and duodenum complicated by hemorrhage 381 successful resection of upper half of 383 duodenal reurgitation as factor in neutralization of acidity of 384 small and partial insufficiency of pylorus 385 volulus of 461 elective localization of streptococci isolated from cases of peptic ulcer 461 mechanism of pain production in peptic ulcer 462 inflammatory and toxic factors in pathology of gastroduodenal ulcer 46 peptic ulcer after extensive resection of 463 ambulatory treatment of peptic ulcer 464 ulcer of and jejunum 464 treatment of ulcer of 464 465 ulcers of and jejunum and gastrojejunocolic fistula 464 care of ulcer of by intensive alkaline treatment 465 trend of surgery of 466 fatal dysenteric enteritis directly secondary to gastroenterostomy or extensive gastric resection for ulcer of 467 late results of gastroenterotomy in ulcer of lesser curvature of 467 acidity of following gastric resections 468
Strabismus Mechanics of squint operation 4
Streptococci Tests of valence of in treatment of cancer of uterus 00
- Suprarenalectomy in juvenile endarteritis obliterans and Buerger's disease 54
Suspensor Traction and 418
Sympathectomy Results of perarterial according to inquiry made among surgeons of Russia in 1916 181 effect of of hepatic artery on wound healing and on bilirubin and glycogen function of liver 28 discordance between local hyperthermia following and findings of study of arterial circulation in these cases 137 superior cervical sympathetic ganglion in anaplexia 1 relation of distribution of sympathetic ramus to brachial plexus to affecting upper extremity 360 perarterial in freezing 455
Sympathetic ganglion Microscopic study of superior cervical and anaplexia 1
Symphyotomy Partial as compared with cesarean section in contracted pelvis 20
Syphilis Optic nerve pallor without functional disturbance 15 induction of abortion in 20 tumors of brain and 390 analysis of Wassermann reaction in 000 pregnant women 480
Symphysis pubis Spasmodic of during labor 486
- TABULARY Tabernacle spine 219
Tannic acid in treatment of denuded surfaces 507
Tarsal amputation Late results of atypical in diffuse tuberculosis of foot 10 tarsus in children 49
Tarsus Late results of atypical tarsal amputations in diffuse tuberculosis of posterior tarsus in children 49 late results of operation on in tarsal tuberculo sis of infants 3 malunion of fracture of scaphoid of 42
Tethymalithy of dermoids and treatment treatment of chondrosarcoma of infant of 16
Tendon of Achilles Laceration of 3
Tendon Rupture of 218
Tendons in the Pathogenesis of 5
Tetanus Treatment of genital tuberculo sis in male 43 classification of malignant tumors of testicle 124 diagnosis and treatment of malignant tumors of 49 diagnosis and treatment of teratoma of 49
Tetanus Cataract and postoperative 44 chronic postoperative 50
Tetanus iodophenolphthalein Common duct stasis caused by in patient who had been subjected to cholecystectomy 194 to effects of sodium 391
Thoracoplasty Surgical treatment of pulmonary tuberculo sis 374 comparison of operations and results in non tuberculous pulmonary suppuration 374
Throat See Chest
Throat See Pharynx
Thromboangitis obliterans Erroneous diagnosis of Raynaud's disease in 54 of lower extremities with pulsation pedal artery 34 primary involvement of upper extremities in 136 diagnosis and treatment of arterial disease of extremities 311
Thymic stridor 14
Thymus Roentgen diagnosis and therapy of in children 14 obsession 458
Thyroglossal duct Technique of removal of cysts in sinuses of 363
Thyroid Malignant disease of 92 adaptation of therapy in malignant disease of 93 aberrant 18 resection of and prevention of recurrent growths 214 hyperthyroidism and its relation to benign tumors of 64 malignant tumors of treated by operation and roentgen rays 364 relation of hyperthyroidism to benign tumors of 449 anesthesia in surgery of 451
Tibia Late results of operation in tibial tuberculo sis of infants 307

- course of labor prolonged by rigidity of cervix of 485
 delivery expedited by large median anterior and
 posterior incision made in cervix of at onset of dila-
 tion 48 hæmorrhages following delivery treated
 by application of clamps which were left in place 486
 subcutaneous exteriorization of incision in after late
 cesarean section 486
- Uvea Entropium of 174
- VAGINA Transplantation of ureters into bowel to
 secure sphincteric urinary control in incurable vesico-
 vaginal fistula 113 histological changes in in differ-
 ent phases of functional cycle of ovary 292 uretero-
 vaginal and vesicovaginal fistule combined 293
- Varicocele Hæmaturia due to vesical varices associated
 with pelvic cured by resection of 406
- Varicose veins Etiology and treatment of 52 injection
 treatment of and their sequelæ 53 136 of leg from
 point of view of etiology and surgical treatment 53
 treatment of with sugar injections combined with
 venous ligation 502
- Vasoligation as preventive of epididymitis before and
 after prostatectomy 494
- Vein Surgical intervention in infections of lateral sinus and
 internal jugular 1 glaucoma following obstruction of
 central of retina 259
- Veins Fate of foreign bodies in venous circulation 5
 etiology and treatment of varicose 52 53 injection
 treatment of varicose and their sequelæ 53 136
 treatment of varicose with sugar injections combined
 with venous ligation 502
- Vena cava Effects of denudation of inferior at its be-
 coming at renal vein 50
- Ventricles Observations regarding ventricular punctures
 365
- Ventriculography Indications for and technique of 68
- Version In estimation into results of breech labor and of
 prophylactic external cephalic during pregnancy 36
 technique of external 36
- Vertebrae See Spine
- Vertigo Surgical treatment of by opening saccus endo-
 lymphaticus 89 1,6
- Visual fields Relation of cupping of optic disk to in
 glaucoma 14 types of defects of 60
- Vision Sight saving class work from standpoint of oph-
 thalmologist 447
- Vitamines Relation of deficiencies to diet deficient in 5
- Vitreous Loss of in cataract extraction 60
- Vomiting after operations on stomach 278
- WASSERMANN reaction Analysis of in 1000 preg-
 nant women 480
- Whitlow Hutchinson on melanotic 140
- Wound Effect of sympathectomy of hepatic artery on
 healing of 8 unusual fatal infection of operative
 yielding pathogenic anaerobe of gas gangrene group
 not hitherto described 313 inadequate skin prepara-
 tion as cause of infection of operative 506
- Wrist Anthrax is 46
- XRAY See Roentgen ray

BIBLIOGRAPHY INDEX

SURGERY OF THE HEAD AND NECK

Head 62 145 233 318 4 3 513
 Eye 6 145 233 318 423 513
 Ear 63 146 34 319 424 514
 Nose and Sinuses 64 147 234 320 425 514
 Mouth 65 147 235 320 425 515
 Pharynx 65 147 235 320 425 515
 Neck 65 147 235 3 1 4 6 5 5

SURGERY OF THE NERVOUS SYSTEM

Brain and Its Covering Cranial Nerve 66 49 31
 321 427 516
 Spinal Cord and Its Coverings 67 149 32 428 517
 Peripheral Nerves 67 149 237 322 4 8 517
 Sympathetic Nerves 67 149 37 32 428 5 7
 Miscellaneous 67 149 237 3 4 8 517

SURGERY OF THE CHEST

Chest Wall and Breast 68 150 237 323 428 518
 Trachea Lungs and Pleura 68 50 37 323 428 518
 Heart and Pericardium 69 151 238 3 3 430 519
 Esophagus and Mediastinum 69 151 238 324 430 5 9
 Miscellaneous 69 151 238 3 4 430 519

SURGERY OF THE ABDOMEN

Abdominal Wall and Peritoneum 69 151 39 324 430
 519
 Gastro Intestinal Tract 69 151 239 325 431 520
 Liver Gall Bladder Pancreas and Spleen 71 154 41
 327 433 522
 Miscellaneous 73 155 4 328 434 523

GYNECOLOGY

Uterus 73 156 243 3 9 435 523
 Adnexal and Peritoneal Conditions 74 156 43 3 9
 435 524
 External Genitalia 74 157 244 330 435 525
 Miscellaneous 74 157 44 330 436 5 5

OBSTETRICS

Pregnancy and Its Complications 75 58 245 331 436
 525
 Labor and Its Complications 76 160 247 332 437 5 6
 Puerperium and Its Complications 77 16 48 333 438
 527

Neonatal 7 161 49 333 438 527
 Miscellaneous 77 161 49 334 438 528

GENITO URINARY SURGERY

Adrenal Kidney and Ureter 77 16 249 334 438 528
 Bladder Urethra and Penis 78 6 250 335 439 529
 Genital Organs 79 6 5 335 44 530
 Miscellaneous 79 163 51 335 440 530

SURGERY OF THE BONES JOINT MUSCLE TENDONS ETC

Compound Fracture Bone Joint Muscle Tendons Etc
 79 64 5 336 440 53
 Surgery of the Bone Muscle Tendons Etc 8 65
 333 442 3
 Fractures and Dislocation 81 161 53 338 44 532
 Orthopedic General 3 330 443 533

SURGERY OF THE BLOOD AND LYMPH SYSTEMS

Blood Vessel 8 167 2 4 339 443 533
 Blood Transfusion 8 67 54 340 444 533
 Lymph Vessel and Glands 83 168 254 341 444 534

SURGICAL TECHNIQUE

Operative Surgery and Technique Postoperative Treatment
 83 68 2 34 444 534
 Antiseptic Surgery Treatment of Wounds and Infections
 84 68 5 34 444 534
 Anesthesia 84 169 55 34 445 534
 Surgical Instruments and Apparatus 169 34 445 535

PHYSICO-CHEMICAL METHODS IN SURGERY

Poentgenology 84 70 56 34 445 535
 Radium 84 70 256 343 445 535
 Miscellaneous 84 170 256 343 445 535

MISCELLANEOUS

Clinical Entities—General Physiological Conditions 85
 170 257 343 446 53
 General Bacterial Protozoan and Parasitic Infections
 85 71 257 344 446 536
 Ductless Gland 86 172 58 446 536
 Surgical Pathology and Diagnosis 86 7 58 344 446
 536
 Experimental Surgery 72 344
 Hospitals Medical Education and History 172 58 344
 536

AUTHOR INDEX

- Abadie J 17
 Addison O L 90
 Adler F H 173
 Albee F H 304 421
 Allen D S 372
 Allen E V 54
 Allen J H 472
 Alvarez W C 16 468
 Alyea E P 494
 Anderson J 371
 André P 40
 Andrei O 308
 Andresen A F R 101
 Angelelli O 135
 Antonucci C 300
 Araz S L 452
 Archibald E 371 374
 Arens R A 17
 Arisz L 380
 Armani L 96
 Arn R D 129
 Arnaud M 506
 Arnould N 88
 Auvray 501
 Babianz L 461
 Babcock W W 100
 Bailey H 399 494
 Baird D 36
 Baker S J 40
 Balado M 453
 Balboni G M 373
 Balfour D C 381
 Ballantyne A J 359
 Bandler C G 495
 Banzet 366
 Baran er 90
 Barbellion P 45
 Barga J A 386
 Bari ty M 11
 Barlow R A 5
 Barnes F L 108
 Barnett L E 511
 Barthélemy 398
 Bass M H 356
 Basset 387 468
 Basset A 10 388
 Beadle O A 474
 Beckman H 509
 Bedell A J 261
 Beer E 406
 Begg R C 31 118
 Beigelman M N 447
 Belcher G W 300
 Belden W W 14
 Belfield W T 408
 Beller A J 279
 Benda R 295
 Bérard 130
 Berghausen O 232
 Bernard A 95
 Bernard R 227
 Bernheim B M 225
 Bernste n M A 217
 Bernsten A 53
 Berry Sir J 90
 Bianchen T 122
 Bianchi G 471
 Bierendempfel Pleick L 94
 Bil er F 406
 Blake J A 418
 Bledsoe R W 358
 Bohmansson G 88
 Bohnen P 485
 Boldyreff W N 380
 Bollman J L 386 391
 Bonnet P 109
 Bonney V 283
 Boorstein S W 34 20
 Boothby W M 73 459
 Boppe 19
 Borchers E 383
 Bordier H 58
 Botreau Poussel 105
 Botsford M E 46
 Bourde Y 505
 Down H H 25 364
 Boyd W 27
 Boyden E A 390
 Braasch W F 406 497
 Bracci Torsi H 50
 Brain W R 453
 Brehm W 486
 Bretkopf L 461
 Brennemann J 387
 Brenner E C 1
 Bressot 217
 Brindley G V 23
 Brisset 32
 Bristow W R 30 4 8 498
 Brofeldt S A 209
 Brougher J C 188
 Brouha 296
 Brown A L 371
 Brown E V L 447
 Brown G E 54 311
 Brown R K L 303
 Bruegelmann C 298
 Brun P G 60
 Brunn H 186
 Buchbinder J R 75
 Buchbinder W C 87
 Bué V 482
 Bunnell S 91
 Burden V G 288
 Burnam C F 177
 Butler H B 103
 Butler T H 175
 Cabot H 493
 Cadenat 104 105
 Calhoun J P 448
 Campbell M F 127 231 408
 Cantelmo O 503
 Caorsi L J 283
 Capiz ano N 477
 Capps J A 74
 Caraven 387
 Carey E J 48
 Carnett J B 9 2 5 84
 Carp L 33
 Carranza F 477
 Carrington G L 18
 Ca son W J 125 405
 Carvill M 173
 Casariego A G 42
 Case J T 3 0
 Cassut A 300
 Castellani A 511
 Cavla A 195
 Cayl r H D 391
 Champ n A N 45
 Chapman J F 4 9
 Chapman A J 0
 Charbonnel 82
 Charles Bloch 80
 Chatillon F 33
 Chau n L 41
 Chevassu 0
 Chousy R 46
 Christopher F 345
 Christophe son I B 511
 Ciminuta A 18
 Clark S L 271
 Clerf L H 93
 Clow A E S 3
 Clute H M 138
 Cockayne E A 406
 C fley R C 80
 Cohen M 357
 Cohn I 133
 Coley W B 231
 Colled e L 66
 Collins C W 494
 Collins L 3 7
 Condamin I 1
 Conley A H 20
 Constam G R 136
 Constans G M 1 3
 Conwell H E 133
 Corbus B C 2 3 301
 Cornil I 115
 Corwin J 295
 Cosacese 468
 Cosgrove K W 357
 Cotton I J 50 420
 Counsell V S 387 390
 Crabtree E G 213
 Craig G 393
 Craig W McK 366
 Cra nicanu A 506
 Crane J F 484
 Craver L F 60
 Crey 267
 Crosbie A H 492
 Crowe S J 261 372
 Crowther W L 401
 Cruckshank J N 205
 Cryderman W J 280
 Cubbins W R 0
 Cuizza T 290
 Cummin R E 49
 Cunfo 380
 Curtis A H 0
 Cutler C W Jr 285
 Cutler E C 458
 Cutler I H 128
 Cutler M 369
 Dahl Iversen E 194 419
 Dallera N 292
 Danf rth W C 13
 Danhiez P 121
 Dansey St J W 16
 Darcissac M 2
 Danet R 39
 Da id A C 6
 Da idson H S 204
 Davis C H 297
 Dean A L Jr 1 0
 Dean L W 6 03
 D chaume M 1
 Dega W 130
 De Kleijn A 17
 D la enière Y 9
 Delcour J 95
 DeLee J B 116
 Delrez L 9
 D l Rio Hortege P 79
 Delzell W R 490
 Demel R 383
 Demis R 95
 Derby G S 73
 D sgouttes L 95
 Desjacques R 5
 De plas B 30
 Despons J
 Devèze L 11
 Devine H B 17
 Dick B M 391
 Diamond L 45
 Diss A 182
 Dittmch K von 18
 Di on W E 396
 Dadds G H 480
 Donati M 131
 Donovan C 453
 Dore E 58
 Dott N 89
 Douay L 33
 Doubleday I N 176
 Dougal D 399
 Dowden J W 283
 Downm L 454
 Döza L 302
 Draper J W 386
 Dres er R 380
 Droegmueller E H 101
 DuBoise F G 28

- D dge L b 4
 D fly J J 77
 D ma A 37
 D nh m E C 50
 D hll T P 9 45
 D phy F B 6
 D sld sp M 4
 D t A P 393
 D al P 5
 Dyke S C 37
 Ebb b h C W 9
 Ebb t E M 9
 Egr r C 3 3
 Ehh ff C 8
 F d A 58
 F d th D N 3
 El E L 469
 Il t E J 8
 Ellus Z H 58
 El b rg C A 6 454
 El J E 04
 Ely I W 309
 Em I P 63
 Esk ls I H 4
 Ekl lu d V
 Evn J
 Fab K
 Fag e C H
 F ba J s 3 9
 F l n R 6
 Falli L S
 Falt P 2
 Fa m H L 4
 Fa C E 3 7
 Fa G M 5 6
 Fa J L 5
 F del F 500
 F W A 8
 Feldma M 34
 Fent R A 59
 F y 48
 Fld C 46
 Fnk H I 1 6
 Fndley P 07
 Fn ff W C 3
 Fn h tt R 33
 Fnz NS 96
 Fnz O 4
 F he 7
 F he A 49
 F hr A L 4
 Ftt W T 388
 Ftz ld R R 9
 Ftz Gbb G 488
 Ftz ll m D C L 9
 Fl I 50
 Fl hm n C G 393
 Fnt R 3
 F t F P 448
 F t H J 4
 F v L W 6
 F k A 44
 Fa k R T 478 5
 F r J
 F ser J P 9
 F ser J S 5 36
 Fraz e C H 80
 F ed F C 6
 Fr b rg A H 49
 Fr d n v ld J 84
 Fr nt c ll E 9
 Fruh n h L A 98
 Fry R M 87
 Fuld T 88
 Full ton A 3
 F H D 293
 Gab l l W B
 G n l n I J 4
 G lla h W J 9
 Ga P 9
 Garip y 46
 G s 4 6
 G d n A 4
 Ga d H 4
 G S H 58
 Ghed A 86
 Cbbe d G F 36
 Gbbro A A 484
 Gfu H Z 39
 Gl H H 4 4
 Gnzl h L 9
 Gp c I F 5
 Gl d t I J 47
 Go E L 59
 G bl 47
 G tt h 30
 Goldb e M 4 478
 Go d n C A 05
 G d W t S C 80
 Gottl b J 3
 Gottl b J G 300
 G y J P 43
 G dl H S 50
 G b m E A
 G g F B 3 5
 G t F C 04 08
 G th m S A 3
 G m n M 3
 G m P M 379
 G R C 5
 G W P 1
 G v H T 498
 G b um S S 25
 G C H 6
 G L B 49
 G eg R 50
 C g H 3
 C y T r G 9
 C ma lt L 388 4
 C om J M 4 448
 C m n J 498
 Gru A 3
 Gub l I
 G ll m A 5 6
 G th D 80
 Gw thmey J T 5 8
 Had R L 3
 H g B H 406 403
 H b E v 356
 H s S F 45 459
 H lb t m K T A 447
 Hamant A 5
 H m k R A 6
 Ha dl v W S 72
 Hanf rd J M 38
 Hanr han E M Jr 509
 H disty R H M 464
 Ha e C C 496
 H rr h F W 49
 Ha ngto S W 47
 Ha t v K 8
 H tma H 467
 Ha lh st G 09
 Ha lblatt R 94
 H tch R A 3 3
 Hawth n A B 490
 Heddl m C A 98
 H m n I 6
 H ll t m J 39
 Helmh lz H F 4 8
 Hempst ad B E 46
 H d o M S 3 4 5
 H dry J 7
 H n ke J A 176
 He ma ge M 95
 He d K F 9
 H ck W W 95
 H r m L G
 H rtzl A L 8 3 6
 353 4 6
 He G J 5
 H tt J 36
 H y d C G 382
 H y G E W 499
 H yms J 476
 Hirs h L I 41
 Hu ch I S 73
 H r t B C 4 9
 Hofb J 35
 Hoffm n A 93
 Holm s G W r 47 38
 H lt ma C 6
 Hoop C W 5 8
 H pk J G 73
 H r J 89
 H r witz E A 94
 H r l y J S J 3
 187
 H r t l m 4
 H K 468
 H d H J 4
 H vtt F D 358
 H lb d W B 357
 H bl M 3
 H et J A 194
 H ff d S R 46
 H gh C 5 9
 H gh W 6
 H mph y F B 3 3
 H n G L 3
 H nt v C 39 397 4 7
 495
 H t gt J L 40
 H y M V 497
 Hyd T L 1
 Hym H T 7
 Ib ah m A B 44
 Iked K 3
 Il D H 4 9
 Illi gw th C F W 19
 I be K R 4
 I geb gts K 3 6 4 7
 Irv F C 4
 I l H 8
 I y A C 30 101
 J ck on A S 507
 Ja ks n R H 2 1
 J obs A W
 J cques L 447
 Jalf H L 3 5 3 9
 James R 377
 J y l F 384
 J ff n G
 J ll tt H 1 7
 Je n s J E 98
 J bson G B 70
 J l J J 5
 J h o C M 46
 J hn o H L 6
 J hnso R K 386
 J hn t e R W 3
 Jo e I 465
 J es L W 359
 J d n S M 464
 J dd E S 4 36 39
 J gh n S 38
 K dj r M K 399
 K m e M 357
 Ka a l A B 3 4
 K pl n I I 1
 K e F E 1 3
 K th S r A 41
 K ll R 09
 K ll gg F S 4
 K dall E C 7
 K m R 87
 K J D 373
 K l L 7
 K y B W 3
 K y E 5 3
 K y Ab g K 9
 Kid er F C
 K ll y E J 495
 Kull J A 357 495
 K lla T I 40
 K lla v J 46
 K lly D B 4
 K kln B R 27 375 39
 K l chm dt 49
 K l t z O 1
 Koch J 28
 K P
 K hle A 8
 Koo tr A R 8
 K pp J G
 K r nbl m K 2
 K o m k G W 7 99
 Kram r S E 49
 Kr k H 4 6
 Kr t chm H L 6
 Kr tzm H A R 8
 493
 Ku tz A 369
 K n z H 95
 K rzrok R 4 6
 K tt er T T 94
 Lac ture J 399
 La w A 306
 L h y r H 464
 La dl y J W S 300
 Lambkin E C 45

- Lambrinudi C 132
 Landa P A 480
 Lapointe A 19
 Larnmore J W 21
 Laroche G 194
 Latzko W 487
 Lawson Sir A 61
 Layton T B 6
 Lecène 501
 Lee F C 179
 Lee W L 457
 Lee Brown R K 300
 Legueu 38
 Leguina L P 42
 Lehmann H 472
 Lenormant C
 Leonard V 228
 Leone P 287
 Lepoutre C 29
 Jepper E H 406
 Lerche W 371
 Lenche R 102 137 501
 Levine M I 37
 Lévy G 182
 Lewis D 140 19 449
 Lewis F P 259
 Lewis W H 143
 Lewinsohn R 187
 Libert E 11
 Liepmann W 480
 Lierle D M 5
 Lijó Pavia J 260
 Lahenthal H 34
 Lillie H I 361
 Lillie W I 365
 Lion G 316
 Lister Sir W T 261
 Litvak S 93
 Lockwood A L 36
 Loefberg O 421
 London Medical Society 272
 Lord E M 403
 Loubat 267
 Lower W E 125 127
 Lowman C J E R 41
 Lowley O S 497
 Lu mbuehl M 460
 Luhmann K 96
 Lupton I M 7
 Lusskin H 305
 Lyman H W 262
 Lynch F W 98
 Lynch J M 5
 MacAuley C 39
 MacCarthy W C 512
 MacDowell F C 403
 MacKenzie D W 13 490
 Mckenzie G W 262
 MacLean H 465
 MacLennan A 189
 MacMurchy H 402
 Macrae D Jr 195
 Magath T B 493
 Magnant J S 453
 Mallet Guy P 15
 Mandelbaum M J 183
 Mann F C 468
 Marion 302
 Marogna P 13
 Marriott Mck 5
 Martin E C 368
 Martin K A 17
 Martin La al 39
 Martland M 406
 Mason J T 101
 Mason M I 18
 Massart 416
 Mas é I 399
 Mas on J C 112
 Mathe C P 404
 Mauclore 19
 Ma rodin D 137
 Maxwell A F 399
 Mayer 130
 Mayer E 58
 McCready J H 448
 McCutchen L G 222
 McFarland J 272
 McIndoe A H 387
 McPheeters H O 136
 McQueen J D 04
 McQueen J M 57
 McCar C S 358
 McWhorter C L 460
 Meaker S R 397
 Mechin C C 4
 Meill e J 47
 Me sen W 53
 Melaney F I 33
 Melville S 18
 Mentzer S H 28
 Metz H 403
 Messeloff C R 50
 Meyer A W 504
 Meyer J L 101
 Michon E 10
 Mikels I M 393
 Milch H 420 510
 Miles W I 2
 Miller T M W 475
 Miller C J 197
 Mille F G Jr 46
 Millul G 502
 Mocquert F 50
 Moersch F I 365
 Moersch H J 273
 Moller W 213
 Moniz E 136
 Moore B H 419
 Moore C U 475
 Moo e G A 40
 Moore I 13
 Morea R 453
 Morgan O G 358
 Morris J H 18
 Morrison L F 273
 Morse J I 458
 Morson A C 41
 Mosher G C 205
 Mosher H P 37
 Moszkowicz L 502
 Motz G 122
 Mouchet 52
 Moulouguet P 356
 Moutier I 276
 Moyzian Sir B 473
 Muller G P 195
 Muro I 220
 Murray G R 92
 Mussey R D 483 484
 Mu enick P 89
 Naumann H 462
 Na arro 469
 Neill T I 55
 Nel on R I 6
 Nelson S H 175
 Nesb t W 97
 Neugebauer F 6
 New G B 36
 Newell I S 05
 Nicholson B B 42 5
 Nickel A C 461
 No ruchi H 3
 Nord o A 294
 Nordmann O 7
 Novak I 113
 Nové Jossander C 49
 Ny trom G 463
 Oclsnar A 97
 Oddy H M 54
 Odelberg A 17
 Odenthal W 290
 O Donovan W J 35
 Okinczyk 90
 Okinczyk J 19
 Olch I Y 384
 Ol ecrona H 310
 Oliver K S 61
 O baan C 1
 Orlando R 454
 Ormond J K 493
 Os ood R B 132 309
 Osh C 496
 O en H I 28
 Pala 201 38
 Palmer A C 303
 Pamperl F 46
 Pancoa t H K 13 453
 Paolucci F 10
 Papin I 40
 Papin W 112
 Paramo e I H 483
 Parker D W 98
 Pa k r W R 60
 Parol G 114
 Pasteau 39
 Pater on D 75
 Paterson J V 359
 Pater on J 375
 Paton J H I 3
 Patick C V 4
 Paulson M 4
 Pautrier L M 182
 Pa i J I 4
 Pearce H I 50
 Peet M M 269
 Pemberton J def 500
 Pend grass F I 113
 Penfield W 10 1 20
 Perdou 104
 Perre A 9
 Perman I 468
 Permar H H 131
 Perrin W S 36
 Persson M 17
 Peter G 230
 Peterson R 113 00
 Petit R 395
 Peynet A 356
 Pfab B 303
 Pfahler C I 230
 Pfaffner D B 64
 Piccardi T J 1
 Pick 410
 Pickhardt O C 371 38
 Pcot 9
 Pie C 80
 Person P H 97
 Pierson R 3
 Pilet 40
 Pines W 88
 Platou F S 31
 Polacco L 94
 Polak J O 109 394 480
 Pomeroy I A 29
 Porcher P 6
 Po tman G 180 19
 Portmann U 93
 Post M H 509
 Pototschnig G
 Pou et F 493
 Prati M 46
 Pratt J I 106
 Proby H 89
 Puccelli V 29
 Puccion L 292
 Puente J J 454
 Pu h W S 13
 Putti V 134 40
 Quick D 369
 Quinby W C 40
 Rados I 173
 Ramirez Corra 456
 Ramond I 99
 Pascol 48
 Pa ault I 3
 Ra zaboni C 106
 Rehattu J 87
 Redway L D 358
 Reese A B 14
 Reischauer 467
 Remer J 14
 Reynold F I 450
 Rhenier J 488
 Ri chard J H 88
 Riehoff W I Jr 449
 Rigano Irrera D 109
 R hetti L 46
 R smann I 03
 R t E 45
 Ritvo M 100
 R ière M 488
 Robert I I 499
 Robert J T 215
 Robineau G 366
 Robins S 307
 Robinson V 16
 Roenne H 4 260 359
 Rollo V H 47
 Ro ers M H 217
 Roll er V 413

- R l c k H C 408
 Roque F 46
 Rose w L C 357
 Ro bacheff S 8
 Rouv è e H 376
 Ro c Ber ger J L 30
 Rowlands M J 47
 R w l ds R P
 Rownt e L G 6 387
 Rub n I C o 396 478
 Ruck M P 06 96
 Rud E 98
 Ru S 58
 Ryerso E W 49 41
- Sa h L 5
 S g W W 363
 S mp J A 1
 Scal n J 80
 S a ll J E 372
 Sch efr W 3 5
 Schaff A J
 Schall LeR 1 83
 S h ufler R M L 3
 S hl n e P 385
 S hlnk H H 398
 Sch litz F W 317
 Schmdt H 57
 S humeden 1 8 8
 S hmegel L 63
 Schmt H 98
 chout D
 Sch b M 4
 S h mach r l 6
 S h mann l 1 3
 S hw F 465
 S hwe e l 4
 Scott G M 53
 Scott W W 4 6
 Scudd r C L 4 8
 Seco 1 C 464
 S c è t n M 4 4
 S gu 1 9
 Sequ a J H 3 5
 S ré lb 3
 S ymo H F 48
 Shamb gh G E 5
 Sharpe W 365
 Sha W 3
 Sh w W l 3
 Sh ld R F 96
 Sh r ood W 1
 Sh y A M 3 33
 Sh t A R 78
- Sh ste B H 67
 S db ry J B 6 55
 Segel I A 35
 Smeoni 1 455
 Sm n F 265
 Smo H L 397
 Sm T H 379
 Sistru l W L 363
 Slat r J K 456
 Sije M 4
 Smth L A 377
 Smth R 4 1
 Snyth D C 183
 Snyth 1 M 5 5
 Sn ll A M 6 387 388
 S mb g J S 75
 S n en h n H 3 5
 S ma M C 68
 So la A 457
 S pa lt R 47
 S w A 359
 Spe d K 4 8
 Spe 1 W 475
 Sp w E
 Spr ch 97
 Spr ll H 89
 Spok l w N N 4
 St l g F 86
 St bb n G F 34
 St i be 1 M E 58
 St ha dt B
 St ph 1 R 384
 Ster W G 5
 St W L 496
 Stew t J P 75
 St t W J 335
 St n H B 4
 St n W S 6
 St k P 44 54
 St l L 54
 S th la d C G 498
 S tt H B 5 0
 Swet J F 9
 S ft C W 67
 S y m L K 47
 Sym d C P 75
- I k hash 1 39 4
 T 9
 T p J 375 474
 T F J 6
 T 3
 T ylo F B 464
 T ylo R G 4
- Tebbutt A H 78
 Th lh im r M 467
 Thom s B A 15 4 1
 Thoma G J 49
 Thoma H M J 449
 Th mp o G H 7
 Thomp o T 1 1
 Thomp W 385
 Thomson S St C 66
 Th m n W lk S J 8
 Todd T W 409
 T l nd C C 473
 T ok F T 447
 T k L 358
 To a L 506
 Tow t D 36
 Town E B 455
 Troell A 44 9 449
 Tro J 7
 Trotter W 83
 Tru dal P E 3
 T k G 457
 T S 37
- Uphely J 4 4
 Ullm n H J 4 3 6
 1 n Luke W B D 484
 1 n D W ld be 1 L 36
 1 n H J 1 26
 1 l d 9
 1 u M 1 0
 1 bry k J R J 88
 1 ryp C D 447
 1 st egh C 75
 1 dg ff I J 88
 1 l h 5
 1 l to M 9
- W e H I 5
 W k l 1 C P G 4 5 4
 W k A 397
 W k k M 45
 W l J O 3
 W l V G H 391
 W lm l 1 T 4
 W lte A B 5 7
 W l t rs W 386
 Walt A J 83 45
 W g t n O H 39
- Warthe H J Jr 25
 Wasson W W 14
 W ts n B P 36
 W tt J C 6
 W gh G E 3 9
 Wa h T R 123
 We ll Sp R 90
 W nb M 5 8
 W nt b M 5
 W erl E 99
 W 1 J F 388
 W rauk H 1 486
 W s S 00
 W k ld B 409
 W o M B 45
 W th H 5
 Wh el S W I D C 385
 Wh ppl 1 O 7
 Wh t h e B 4
 Wh tt mor W 373
 W 1 k M 96
 W dm B P 3
 W ddbolz H 4 4
 W lk A L 39
 W lk D P D 9
 W ill ams n G S 88
 W ill am n H C 399
 W ill B C 474
 W lm r W H 358
 W dm th C L 5
 W lo J St G 36
 W l P D 4
 W n l 1 3
 W nt H L 60
 W m ck N 1 14
 Wood F C 14
 Woodhill 1 R 178
 Wool 1 J H 466
 W l to W H 8
 W ht R E 74
 W d m n H 1 74
- Y m m t T 9
 Y t W M 5 1
 Y dk A M 4
- Zad k I 3 5
 Za t H 97
 Zeyl nd J 30
 Z liboo G 487
 Zuan W I 84
 Zubiz et H 90
 Zuca ll J 5 5

